

South Carolina Department of Health and Environmental Control

Division of Procurement Services

Invitation for Bid

Solicitation No.: IFB-32625-12/11/07-EMW

Date Issued: 11/1/07

Procurement Officer: E. Madison Winslow

E. Thadion 28-76

Phone No.: (803) 898-3487

E-mail Address: winsloem@dhec.sc.gov

(See provision entitled Taxpayer Identification Number)

DESCR	IPTION: Cori	ective action fo	or petroleum re	eleases – US	T Permit N	umber 07.	359, Columbia, SC	
		T	he Term "Offer'	" Means You	r "Bid" or "I	Proposal"		Page 1 of 91
SUBMIT	OFFER BY (C	Opening Date/Ti	ime): Decembe	r 11, 2007/2	2:30 pm E.T.			
NUMBE	ER OF COPIES	TO BE SUBMI	TTED: One (1) original				
QUESTI	ONS MUST BI	E RECEIVED B	BY: November	27, 2007/2:	30 p.m. E.T.	See S	Specific Requirements, N	umber 2
SUBMIT	YOUR SEAL	ED OFFER TO	EITHER OF T	HE FOLLO	WING ADDI	RESSES:		
	MAILING AI				PHYSICAL		SS:	
	SC DHEC				SC DHEC			
		ocurement Serv			Division of	Procureme	ent Services	
		iness Managem	nent		Bureau of B	usiness M	anagement	
	2600 Bull Stre				2600 Bull St	treet, Rooi	m 1200 – Aycock B	ldg.
	Columbia, S.C				Columbia, S			
		Offers	Must Be Scaled: 5	See provision e	ntitled "Submitti	ing Your Off	fer"	
AWARI AMEND) &)MENTS	Award will be p be posted at the	posted on or after following web ac	December 18 idress: http://	3, 2007. The awww.sedhec.n	ward, this s net/procurer	olicitation, and any an	nendments will
terms of date.	st submit a signer the solicitation. OF OFFEROR	You agree to l	form with your hold your offer	open for a	minimum of	thirty (30	osal, you agree to be calendar days after EROR'S TYPE OF	r the opening
							(Check one)	LIVIII I.
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*************	Ideal Storm	TOILE .				□ Partne	ership	
(Person sign	ing must be authorized	to submit binding offe	er to enter contract on	behalf of Offeror	named above.)	□ Corpo	oration (tax-exempt)	·
TITLE				le of person signi		□ Corpo	rate entity (not tax-ex	empt)
	<u> </u>					□ Gover	rnment entity (federal	state or local)
PRINTE	D NAME	(Printed name of	f person signing above	DA	ΓE	□ Other		, oute, or room,
			•					·
· ·				Seeders .		(See	provision entitled "Signi-	ng Your Offer")
identified single and	as the offeror a	bove. An offer a ntity. Do not use	may be submitte e the name of a l	ed by only or branch office	ne legal entity or a division	y. The enting of a large	et will be formed wity named as the offer entity if the branch	eror must be a
OFFERO	R'S HOME OF	FICE ADDRES	SS		(Addre	es for the off	feror's principal place of	harringer)
						33 101 1110 011	oror s principal place of	business)
CITY	<u></u>		3888	STATE			ZIP CODE	
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STATE (OF INCORPOR	ATION			(If offero	τ is a corpor	ation, identify the state of	f Incorporation)

TAXPAYER IDENTIFICATION NO.

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

BID NUMBER: IFB-32625-12/11/07-EMW

I. SCOPE OF WORK

A. SOLICITATION STATEMENT

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) is seeking services to perform excavation and disposal of petroleum-contaminated soil at regulated underground storage tank sites. The objective is to excavate and dispose of a predetermined volume of petroleum-contaminated soil. All offerors must be either a South Carolina Certified Class I or Class II UST Site Rehabilitation Contractor or be qualified for certification within fifteen (15) days of notice of intent to award, in such cases the final award will be made after successful certification.

B. SCHEDULE OF DELIVERABLES

The following table summarizes the deadlines for deliverables associated with this contract.

DELIVERABLE DUE	DEADLINE
Questions	By 2:30 p.m. ET, 11/27/07
Sealed Bids	By 2:30 p.m. ET, 12/11/07
Implementation of Work	30 days from Notice to Proceed
Project Completion	Within 60 days from Notice to Proceed
Excavation Report	Within 90 days from Notice to Proceed

C. SITE SPECIFIC INFORMATION

The scope of work defined in this solicitation is to be implemented at:

UST Permit #	Facility Name	Site Address	Date Release Reported	Appendix #
07359	Former Columbia Maintenance Facility	3736 Marsteller St., Columbia, SC	December 30, 1991	Α

II. CONTRACTUAL REQUIREMENTS

A. GENERAL REQUIREMENTS

- 1. CONTRACT PERIOD: The contract will be effective from date of award until the corrective actions are complete as described in this contract.
- 2. EQUAL OPPORTUNITY EMPLOYMENT: Contractor must agree to make positive efforts to employ women, minorities, and minority-owned businesses.
- 3. AMENDMENTS: All amendments to this solicitation shall be in writing from the SCDHEC Procurement Officer indicated on page one of this solicitation. SCDHEC shall not be legally bound by any amendment, interpretation or settlement that is not in writing.
- 4. RESTRICTION ... THE ONLY OFFICIAL CONTACT PERSON AT SCDHEC DURING THE SOLICITATION AND AWARD OF THIS CONTRACT IS THE PROCUREMENT OFFICER INDICATED ON PAGE 1 OF THIS SOLICITATION. OFFERORS ARE NOT TO CONTACT ANY OTHER SCDHEC PERSONNEL LOCATED OUTSIDE THE BUREAU OF BUSINESS MANAGEMENT.
- 5. AWARD: Award will be made to a South Carolina Certified Class I or Class II UST Site

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Rehabilitation Contractor based on the total cost for all sites listed. The total cost must be advantageous to the State of South Carolina. In the event that two or more bidders submit the lowest total amount, the award, if made, will be decided in accordance with the Tie Bids procedure in Section B.(6) of the Underground Storage Tank Environmental Remediation Procedures. Submittal of a "No Bid" for an individual site in this solicitation will be considered non-responsive and will result in rejection of the overall bid.

- REASONABLE COST: SCDHEC reserves the right to reject any and all bids that appear to be above the customary and reasonable cost for the same scope of work in a similar geologic setting.
- 7. SITE WORK VERIFICATION: The contractor will be required to excavate and backfill the area defined for the site in Appendix A of this solicitation. Verification that final corrective action goals have been met will be based upon submitted documentation and on-site inspection.
- 8. REPORTS: Deliver one copy of each report to: SCDHEC, Bureau of Land and Waste Management, UST Program, 2600 Bull Street, Columbia, SC 29201. A minimum of one (1) copy of each report must be delivered to the parties listed on the Distribution List included in the appendix.
- 9. INVOICING: Invoices will be submitted to: SCDHEC, Bureau of Land and Waste Management, UST Program, ATTN: Financial Section, 2600 Bull Street, Columbia, SC 29201. A separate invoice for the site must be delivered with the final reports. The final invoice must be received at the above address within four months of project completion or funds will be uncommitted as required by the Section 44-2-40(B) of the SUPERB Act. If funds are uncommitted the submitted invoice will be held until funding is available. Payment will only be made for documented work completed as specified in this contract.
- 10. NOTIFICATION FOR FAILURE TO PERFORM: If the contractor fails during the course of this contract to meet any condition or specification as outlined in this document without prior notification to the project manager of circumstances legitimately beyond the control of the contractor, the award will be voided by SCDHEC. In the event that the award is voided due to a breach of contract as outlined above, no payment of any invoices will be made. Any voiding of an award due to breach of contract will apply only to the site where the deficiency(ies) occurred and will not directly affect other sites awarded in conjunction with this solicitation.
- 11. LIMITATIONS: The accepted corrective action cost will be final and will not be increased or cancelled for any reason (e.g., increased subcontractor costs, equipment malfunction, acts of nature, etc.) with the exception of unforeseen subsurface conditions as determined solely at the discretion of the SCDHEC. Any action taken by the SCDHEC under this condition that might result in the cancellation of a corrective action award due to circumstances described in this condition will apply only to the affected site and will not directly affect other sites awarded in conjunction with this solicitation. Payment will only be made for documented work completed as specified in this contract. Once corrective action has been initiated under this contract, in the event of a cancellation due to the circumstances prescribed in this condition, final payment will be based on the documented work completed for each site. Contractor-owned items used on-site for the contract that are damaged or destroyed by common acts of nature, improper maintenance or handling, theft or vandalism will not be replaced or reimbursed by the SUPERB Account.

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B. SPECIFIC REQUIREMENTS

- 1. CONTRACT SCOPE: This contract is for corrective action at one site in South Carolina.
- INQUIRIES: Questions or requests for information must be submitted in writing and received by 2:30 P.M. ET, November 27, 2007. After this date, no further questions will be addressed. A written response will be provided to all requestors of the solicitation. The questions may be faxed to E. Madison Winslow in the SCDHEC Bureau of Business Management at (803) 898-3505.
- 3. SITE SPECIFIC DETAILS: A brief technical summary of the releases and Excavation Corrective Action Plan (ECAP) for the site are attached in Appendix A. The complete technical file for the site will be available for review through the Freedom of Information (FOI) Office located at the Stern Building, 8911 Farrow Road, Columbia, SC. Offerors are strongly encouraged to review the files to ensure a complete understanding of the project requirements. The successful offeror will be responsible for all information in the technical files.

 Appointments to view the technical files may be scheduled on weekdays between the hours of 8:30 A.M. to 5:00 P.M. by calling the SCDHEC Freedom of Information Office at (803) 898-3882.

III. SPECIFICATIONS for EXCAVATION AND DISPOSAL

A. GENERAL SPECIFICATIONS

- 1. SUBMITTALS: All offerors must submit the Solicitation Response. The proposal must outline the total cost (in U.S. dollars) to complete the scope of work.
- 2. MINIMUM REQUIREMENTS: All rehabilitation activities associated with a UST release must be performed by either a SCDHEC certified Class I or Class II UST Site Rehabilitation Contractor as required by R.61-98 or be qualified for certification within fifteen (15) days of notice of intent to award, in such cases the final award will be made after successful certification. All reports must be sealed by a Professional Engineer or Professional Geologist registered in the State of South Carolina. All laboratory analysis for chemicals of concern must be performed by a SC-certified laboratory. All applicable certification, training, permits, applications, and fees associated with excavation or transportation of soil, transportation or operation of equipment, and any other action requiring a permit are the responsibility of the contractor. Any required business or occupation license and occupational safety and health training (e.g., OSHA) as defined by the laws and regulations of the United States of America, the State of South Carolina, the county or city is also the responsibility of the contractor. The terms and conditions of all applicable permits will be met. Any contaminated groundwater, soil, or construction material must be properly transported and disposed of, or treated at an approved facility with prior approval from SCDHEC.

B. PERFORMANCE REQUIREMENTS

1. EXCAVATION CORRECTIVE ACTION PLAN IMPLEMENTATION: After award of the contract, UST Program will issue a notice to proceed with ECAP implementation. The contractor will implement the ECAP (see Appendix) within 30 days of receipt of the notice to proceed. Disruption to the normal business at the site will be kept to a minimum. The contractor will return the site to the condition that existed prior to installation of the corrective action system (e.g., asphalt paved areas will be repaved with asphalt, concrete areas replaced with concrete, grass area will have soil replaced to the original grade and sodded with grass, etc.). The contractor will, at all times, keep the site free from waste materials and rubbish related to the corrective action. Until completion of

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the corrective action, the contractor will keep the premises in a clean, neat and workmanlike condition satisfactory to SCDHEC. All soil and wastewater generated on-site will be removed from the site promptly. Manifests documenting the proper disposal of the soil, wastewater, or FPP must be included in the appropriate report.

Implementation of the ECAPs is not authorized until the contractor receives correspondence from the UST Program indicating that the required public notice period has been successfully completed. If premature implementation occurs, the UST Program will not reimburse those costs from the SUPERB Account, and the bid award will be reduced by that amount. If SCDHEC agrees with early implementation to better protect human health in an emergency and provides approval in writing, early implementation without any reduction to the corrective action amount will be authorized.

- 2. UTILITY SURVEY: After the UST Program issues a notice to proceed with ECAP implementation and before excavation occurs, the contractor will conduct a utility survey of the site. The contractor is responsible for identifying all surface and subsurface utilities. In the event that the results of the utility survey indicate that it is not possible to proceed with excavation, the contract will be cancelled, and the contractor will be reimbursed \$1,000.00 for personnel mobilization, utility survey, and survey report preparation and associated costs.
- 3. REPORTING: Complete and submit an excavation report. Deliver one paper and one electronic (pdf) copy of each report to: SCDHEC, Bureau of Land and Waste Management, UST Program, 2600 Bull Street, Columbia, SC 29201. A copy of the report must be delivered to the parties listed on the Distribution List included in the appendix for the site. The excavation report for each site is due within 90 days from the Notice to Proceed. The excavation report must include:
 - A. A narrative portion describing excavation and disposal activities and including photographs of field work.
 - B. A scaled site map showing the locations of buildings, roads, monitoring wells, the former UST system, utilities, and the excavation area superimposed.
 - C. A table of screening results of soils returned to the excavation.
 - D. Pre-excavation and post-excavation compaction test results.
 - E. A copy of the SCDHEC approval letter and manifests/ weigh tickets for all contaminated soil, groundwater or FPP removed from the site for treatment and/or disposal.
 - F. Signature and seal by a professional engineer or professional geologist registered in the State of South Carolina.

All rehabilitation activities associated with the UST releases must be performed by either a SC Certified Class I or Class II UST Site Rehabilitation Contractor. All air, soil, and groundwater analyses must be performed by a South Carolina certified laboratory.

4. EXCAVATION: The area to be excavated for the site is detailed in Appendix A. The successful contractor should be prepared to handle saturated soil. Please see the appendix for the estimated depth below the water table that the excavation will breach. The excavation must be backfilled with properly compacted clean soil and leveled to the existing grade. Uncontaminated soils (<10 ppm) must be bermed and covered while stockpiled and may be returned to the excavation. All excavation activities must be conducted in strict accordance with 29 CFR 1926.

In the event that the contractor determines that excavation should continue past the originally estimated excavation area, prior approval must be obtained from the UST Program project manager. In such cases, the costs for the additional disposal and backfill will be based on the

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awarded cost divided by the originally estimated in place cubic yards to be excavated. The contractor must measure the final dimensions of the excavated area. The contractor and UST Program project manager must agree upon the measurement.

- 5. BACKFILL & COMPACTION: The excavation must be backfilled in 8-inch compacted lifts with suitable fill material and compacted at a minimum to the pre-excavation dry density. The contractor must determine the pre-excavation density by cutting to a depth of two feet and conducting a set of density tests (one test per 2,000 square feet with a minimum of 2 tests) using the scientifically accepted density test of his/ her choice. The post-excavation density testing must be conducted by the same method as the pre-excavation testing. The contractor shall perform a minimum of one set of density tests for every vertical foot of compacted fill emplaced. For the purposes of this contract, a set of density tests shall consist of one test per 2,000 square feet with a minimum of 2 density test(s) per vertical foot required. Density tests must be evenly distributed throughout the excavation area. Locations and results of the pre-excavation and post-excavation tests will be submitted in the excavation report.
- 6. SECURITY: During excavation activities, the contractor is responsible for securing the excavation (e.g. flagging, cones, barriers, etc.) in order to prevent persons or traffic from entering the area. In the event that excavation and backfilling activities are not completed at the end of the work day, the contractor must ensure that the excavation area is adequately marked and secured overnight.
- 7. DISPOSAL: Properly dispose of all contaminated soil, wastewater (groundwater, runoff, precipitation) or free-phase product generated during the implementation of the ECAP for each site. The disposal facility selected for treatment and disposal of any contaminated soil and groundwater must be a SCDHEC-approved facility. The owner/operator of the UST facility is considered the generator for any contaminated soil and groundwater or FPP. The contractor must document disposal of contaminated soil, groundwater, and FPP in the excavation report.
- 8. SITE RESTORATION: Disruption to the site's normal business will be kept to a minimum. The contractor will return the site to the condition prior to corrective action (e.g., asphalt paved areas will be repaved with asphalt, concrete areas will be replaced with concrete, grass areas will have soil replaced to the original grade and sodded with grass, etc.). The initial site conditions are noted in the appendix.

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A. ACCEPTANCE and DELIVERY STATEMENT

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this	ompliance with the solicitation and subject to all conditions thereof, the offeror agrees, if bid is accepted within days from date of opening, to complete the active action as specified at the prices set forth for all sites as stated below.
that sites be c	the purpose of this submittal and acceptance of financial approval should it occur, I certiful this company understands the nature of the releases and the geologic conditions at the sas documented in the technical files and this solicitation. I certify that all operations will conducted in strict accordance with 29 CFR 1926. Additionally, I certify that this companierstands that acceptance is based on total cost to excavate the areas of concern.
Cont	Certification No.
Auth	orized Representative (Print) Signature
SOL	ICITATION RESPONSE

В.

SITE	FACILITY NAME	CORRECTIVE
(Permit #)	<u> </u>	ACTION COST
A. 07359	Former Columbia	
· .	Maintenance Facility	
	Total Cost	

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PLEASE READ THE FOLLOWING CAREFULLY PRIOR TO COMPLETING BID

INSTRUCTIONS TO BIDDERS

DISCUSSIONS AND NEGOTIATIONS: By submission of a bid, bidder agrees that during the period following issuance of this solicitation and prior to notification of intent or award of a contract, the bidder shall not discuss this procurement with any party except members of the DHEC Procurement Division or other parties designated in this solicitation. Bidder shall not discuss or attempt to negotiate with the using area or program any aspects of the procurement without prior approval of the DHEC Procurement Division Buyer responsible for the procurement. Infractions may result in rejection of the violator's bid.

- 1. Unless otherwise required herein, only one signed copy of the invitation to bid is required.
- 2. Bids "faxed" directly to the DHEC Procurement Office will not be accepted or considered for award.
- 3. Bids, amendments thereto or withdrawal request must be received by the time advertised for bid opening. It is the bidder's sole responsibility to insure that these documents are received by the person (or office) at the time indicated in this solicitation document. DHEC Underground Storage Tank Environmental Remediation Procedures shall govern any withdrawal request received after the time of the bid opening.
- 4. When specifications or descriptive papers are submitted with the bid submission, enter bidder's name thereon.
- 5. Submit your signed bid on this form. Show the bid number on the envelope as instructed. DHEC assumes no responsibility for unmarked or improperly marked envelopes. All envelopes received showing a bid number are placed directly under locked security until the date and time of opening. Do not include more than one bid invitation per envelope. If directing any other correspondence, address the envelope to the Procurement Officer but do not include the bid number on the envelope since it does not include your bid.
- 6. Bidders must clearly mark as "CONFIDENTIAL" each part of their bid which they consider to be proprietary information that could be exempt from disclosure under Section 30-4-40, Code of Laws of South Carolina 1976 (1986 Cum. Supp.; Freedom of Information Act). If any part is designated as confidential, there must be attached to that part an explanation of how this information fits within one or more categories listed in Section 30-4-40. DHEC reserves the right to determine whether this information should be exempt from disclosure and no legal action may be brought against the State, DHEC or its agents for its determination in this regard.
- 7. By submission of a bid, **you are guaranteeing** that all goods and services meet the requirements of this solicitation during the contract period.
- 8. Tie bids will be resolved as outlined in DHEC Underground Storage Tank Environmental Remediation Procedures.
- 9. **Do not include any taxes** that DHEC may be required to pay in the bid price. Upon submission of a bid by a state agency, the Procurement Officer will compute a 5% sales and use tax to the non-state agency bids when applicable (service and labor excluded) in determining the low bidder. This procedure conforms to the SC Tax Commission Sales and Use Tax Regulation 117-174-.95.
- 10. Correction of errors on this bid form: All prices and notations should be printed in ink or typewritten. Errors should be crossed out, corrections entered and initialed by the person signing the bid. Erasures or use of typewriter correction fluid may be cause for rejection. No bid shall be altered or amended after the time specified for the bid opening.
- 11. **Ambiguous bids** that are uncertain as to terms, delivery, quantity, or compliance with this solicitation may be rejected or otherwise disregarded.
- 12. Any bidder desiring to exercise a grievance may do so under section IV of DHEC Underground Storage Tank Environmental Remediation Procedures. All correspondence should be directed to the Director of Procurement Services, Bureau of Business Management, 2600 Bull Street, Columbia, SC 29201.
- 13. Failure to respond to three consecutive bid notices may result in removal of bidder's name from the mailing list.

GENERAL PROVISIONS

- 14. DHEC reserves the right to reject any and all bids, and to cancel this solicitation.
- 15. Unit prices will govern over extended prices unless otherwise stated in this solicitation.
- 16. **Prohibition of Gratuities:** Amended section 8-13-420 of the 1976 Code of Laws of South Carolina States: "Whoever gives or offers to any public official or public employee any compensation, including a promise of future employment, to influence his action, vote, opinion or judgment as a public official or public employee or such public official solicits or accepts such compensation to influence his action, vote, opinion or judgment shall be subject to the punishment as provided by Section 16-9-210 and Section 16-9-220. The provisions of this section shall not apply to political contributions unless such contributions are conditioned upon the performance of specific actions of the person accepting such

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- contribution nor shall they prohibit a parent, grand-parent or relative from making a gift to a child, grandchild, or other close relative for love and affection except as hereafter provided".
- 17. **Bidder's Qualification:** Bidders must, upon request of DHEC, furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. DHEC reserves the right to make the final determination as to the bidder's ability to provide the products or services requested herein.
- 18. **Bidder's Responsibility:** Each bidder shall fully acquaint himself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this solicitation. It is expected that this will sometimes require on-site observation. The failure or omission of a bidder to acquaint himself with existing conditions shall in no way relieve him of any obligation with respect to this bid or to the subsequent contract.
- 19. **Amendments:** All amendments to and interpretations of this solicitation shall be in writing from the DHEC Procurement Office. Neither DHEC nor the Procurement Officer shall be legally bound by any amendment or interpretation that is not in writing.
- 20. **Award Criteria:** Award shall be as indicated herein to the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in this solicitation. Award may take longer than fourteen days. A copy of the award notice should be posted on Procurement Services' website at: dhec.sc.gov/procurement.
- 21. **Rejection**: DHEC reserves the right to reject any bid that contains prices for individual items or services that are unreasonable when compared to the same or other bids if the rejection is in the best interest of the State.
- 22. Competition: This solicitation is intended to promote competition. If the language, specifications, terms and conditions, or any combination thereof restricts or limits the requirements in this solicitation to a single source, it shall be the responsibility of the interested bidders to notify the DHEC Procurement Office in writing so as to be received five days prior to the opening date. Notification may be "faxed" to the DHEC Procurement Office, (803) 898-3505. The solicitation may or may not be changed but a review of such notification will be made prior to award.
- Order of Precedence: In the event of inconsistency between provisions of this solicitation, the inconsistency shall be resolved by giving precedence in the following order; (A) the bidding schedule, (B) the specifications, (C) general conditions, (D) special provisions or special conditions of the contract whether incorporated by reference or otherwise, and (E) instruction to bidders.

GENERAL CONDITIONS

- 24. **Contract Administration:** Questions or problems arising after award of this solicitation/contract shall be directed to the DHEC Procurement Office, 2600 Bull Street, Columbia, SC, 29201. Reference the solicitation and contract number.
- 25. **Default:** In case of default by the contractor, DHEC reserves the right to purchase any or all items in default in the open market, charging the contractor with any additional costs. The defaulting contractor shall not be considered a responsible bidder until the assessed charge has been satisfied.
- Save Harmless: (This General Condition does not apply to solicitations for service requirements). The successful bidder shall indemnify and save harmless the State of South Carolina and DHEC and all its officers, agents and employees from all suits or claims of any character brought by reason of infringing on any patent, trade mark or copyright. The bidder shall have no liability to DHEC if such patent, trademark or copyright infringement or claim is based upon the bidder's use of material furnished to the bidder by the State.
- 27. **Publicity Releases:** By submission of a bid, the contractor agrees not to refer to award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by DHEC or user.
- 28. **Tax Credit Availability:** Bidders interested in income tax credit availability by subcontracting with Certified Minority Firms should contact the Office of Minority Business Assistance, 1205 Pendleton Street, Columbia, SC, 29201. (803-734-0562)
- 29. **Affirmative Action:** The successful bidder will take affirmative action in complying with all Federal and State requirements concerning fair employment and employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin or physical handicap.
- 30. **Assignment:** Unless otherwise indicated in this solicitation, no contract or its provisions may be assigned, sublet, subcontracted, or transferred without the prior written consent of the DHEC Procurement Office.
- 31. **Termination:** Any contract resulting from this solicitation may be terminated by DHEC by providing a thirty-day advance notice in writing to the successful contractor.
- 32. **Non-Appropriations:** Any contract entered into by DHEC resulting from this solicitation shall be subject to cancellation without damages or further obligation when funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal period or appropriated year.

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- 33. Convenience: In the event that this contract is terminated or canceled upon request and for the convenience of DHEC without the required thirty days advance written notification, then DHEC shall negotiate reasonable applicable termination costs.
- 34. Cause: Any contract resulting from this solicitation may be terminated without advance notice by DHEC for cause, default or negligence on the part of the successful contractor.
- 35. S.C. Law Clause: Upon award of a contract under this bid, the person/partnership, association or corporation to whom the award is made must comply with the laws of South Carolina which require such person or entity to be authorized and/or licensed to do business with this State. Notwithstanding the fact that applicable statutes may exempt or exclude the successful bidder from requirements that it be authorized and/or licensed to do business in this State. By submission of a bid, the bidder agrees to subject himself to the jurisdiction and process of the courts of the State of South Carolina as to all matters and disputes arising or to arise under the contract and the performance thereof, including any questions as to the liability for taxes, licenses or fees levied by the State of South Carolina.
- 36. Quality of Product: (This general condition does not apply to solicitations for printing or service requirements.) Unless otherwise indicated in this solicitation, it is understood and agreed that any item offered or shipped as a result of this solicitation shall be new and in first class condition, that all containers shall be new and suitable for storage or shipment, and that prices include standard commercial packaging. If items that are other than new (i.e., remanufactured or refurbished) are desired to be bid, the bidder must obtain written permission to bid such items at least five days in advance of the bid opening date. Written permission must be obtained from the DHEC Procurement Office.
- 37. **Compliance with Federal Requirements:** S.C. State or Federal requirements that are more restrictive shall be followed in bidding, awarding and performance of this contract.
- 38. **Drug-Free Workplace:** Required by Section 44-107-10 (Drug Free Work-Place Act) of the SC Code of Laws, 1976, as amended. By submission of a bid, the bidder certifies that he will comply with all aspects of the Drug-Free Workplace Act and will not engage in the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance in the performance of this contract. This certification also applies to any individual or firm employed by the contractor.
- 39. **Confidentiality Policy:** The successful contractor agrees to abide by DHEC's policy of confidentiality which states in part that all information as to personal facts and circumstances given or made available to employees and/or contractors of DHEC in administration of programs shall be held confidential and shall not be divulged without the express written consent of the individual(s) to which it pertains.
- 40. **Item Substitution**: No substitution of items will be allowed on any purchase made from the awarded contract without written permission from the DHEC Procurement Office.
- 41. **Outside Contractor Program:** If applicable to scope of contract, contracted employees working on DHEC properties are entitled to information about hazardous chemicals present at DHEC; and DHEC's personnel are entitled to information about hazardous chemicals brought to the facilities by contractors. In order to assure continued compliance with the Hazard Communication Standards while contractors are on DHEC property and to control potential compliance obligations under the Superfund Amendments and Re-authorization Act, it is DHEC's policy to:
 - A. Obtain <u>written assurance</u> that the contractor's employees have been trained to understand the hazards of the chemicals at DHEC and how to use appropriate personal protective equipment. All personal protective equipment and training required for the contractor's employees will be provided by the contractor at the contractor's expense. (This includes SC State General Services employees).
 - B. Require the contractor to notify the DHEC Bureau of Business Management or the appropriate DHEC unit Director when introducing hazardous chemicals into DHEC work areas, which may harmfully expose DHEC employees. If the contractor is introducing such hazardous chemicals into any DHEC facility or onto DHEC property, the contractor shall-provide the DHEC Division of Procurement Services or the DHEC unit Director copies of the Material Safety Data Sheets (MSDS) for those chemicals. The DHEC Division of Procurement Services or the DHEC unit Director should provide appropriate information to the DHEC employees before the contractor(s) enter any DHEC facility with chemicals.
 - C. DHEC reserves the right to refuse to allow any contractor to bring any chemical onto DHEC property. The Department also reserves the right to refuse to allow any contractor to bring certain quantities of chemicals on DHEC property.

UST # 07359, Former Columbia Maintenance Facility Richland County

Appendix A

UST # 07359, Former Columbia Maintenance Facility Richland County

Distribution List for Plans and Reports

Responsible Party:

Mr. Peter Reinhart SCDOT PO Box 191 Columbia SC 29201

Property Owner:

Silver Spur Properties LLC 614 Holly St Columbia SC 29205

Original Site Conditions

The site is not currently an operating facility. Surface conditions include exposed soil, vegetated areas, and concrete. The contractor is not expected to repave any areas following excavation, backfill, and compaction activities at this facility.

SCDHEC IFB-32625-12/11/07-EMW

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EXCAVATION CORRECTIVE ACTION PLAN UST Permit # 07359 Release Reported 12/30/1991 Facility Name Fm Columbia Maint, Facility **Priority Class** 3BA Project Manager Susan Block It is estimated that 31,263 cubic feet of soil have been impacted by the petroleum release reported December 30, 1991. Corrective action will consist of excavation and disposal of petroleum-contaminated soils followed by monitored natural attenuation. Prior to excavation, the contractor will conduct a utility survey and present the results to SCDHEC. Excavated soils will be screened and segregated at readings of 10 ppm. Stockpiled soils will be placed on a lined surface and bermed and covered. Petroleumcontaminated soils (>10 ppm) will be properly disposed of at a SCDHEC-approved facility. Uncontaminated soils (<10 ppm) will be returned to the excavation. The area excavated will be backfilled with clean fill soil, leveled to existing grade, and properly compacted to the pre-existing density. Excavation activities will be conducted by a SC Certified UST Class I or Class II Contractor to be determined after completion of project bidding. Site Specific Information Depth to Groundwater: ~14 feet Type of Product Released: Gasoline & Diesel Receptor & Distance to Receptor: Creek, 250 feet Estimated Area of Excavation: 3126 square feet Estimated Depth of Excavation: 15 feet Estimated Volume of Excavation in in-place cubic yards: 1158 cubic yards It is estimated that the excavation will breach the water table by one to two feet. Highest Concentrations of Chemicals of Concern:

		<u> 2006 - Paris III. (j. 1888), Paris III. (j</u>
	Groundwater	Soil
Benzene	31,000	219
Toluene	60,000	1,050
Ethylbenzene	3,100	5,360
Xylene	16,000	17,750
Naphthalene	1,900	1,580
MtBE	1,400	62.2
Date of Sampling	1/17/2007	8/17/2000
Sample Location	GPW-8, GPW-16	B-4, B-5

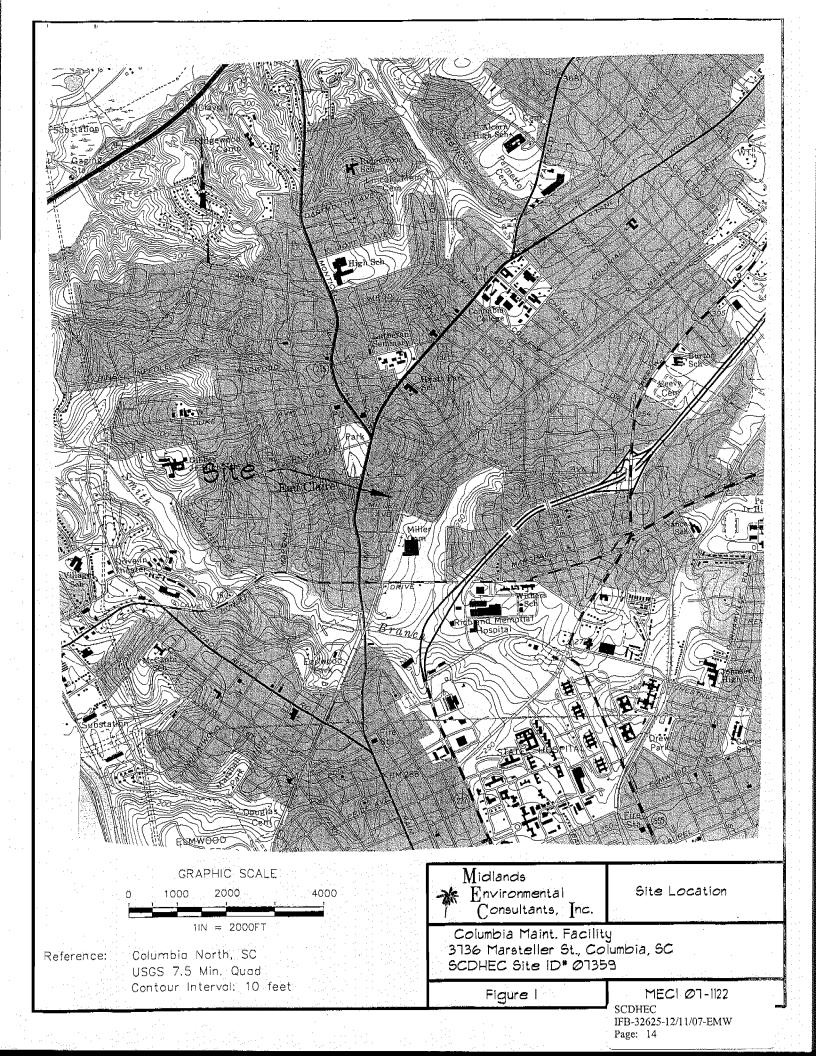
Project Manager Signature

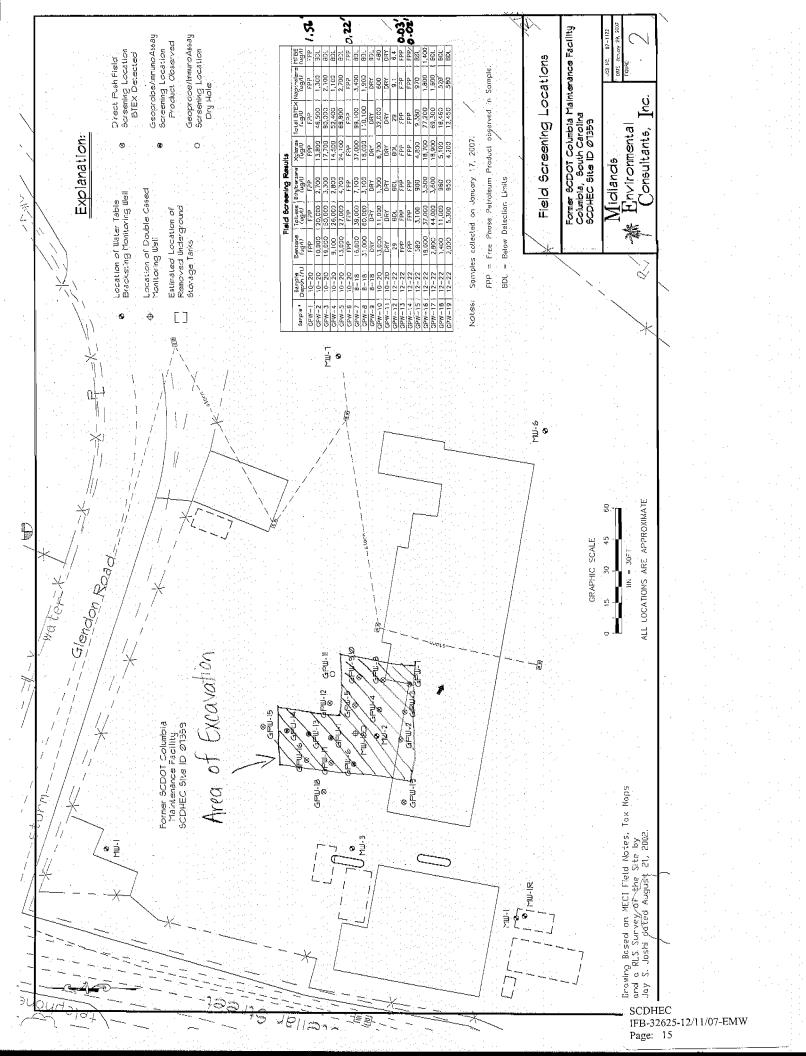
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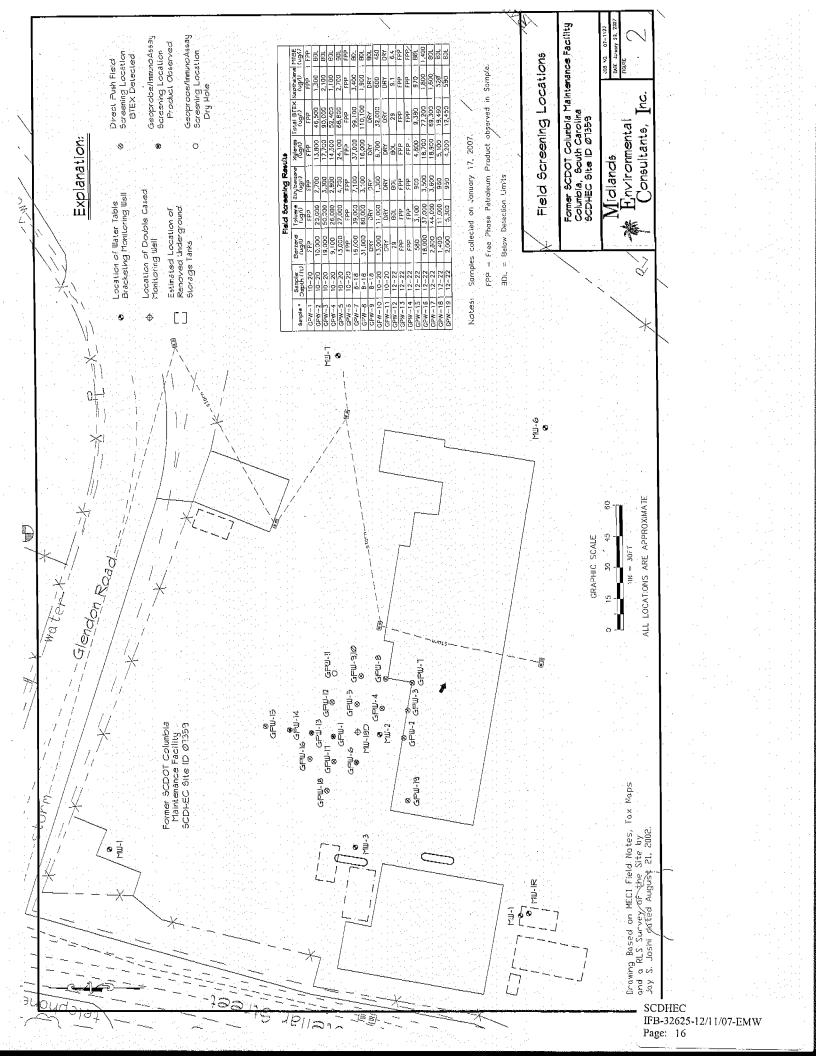
Attachment: Site map showing estimated area of excavation.

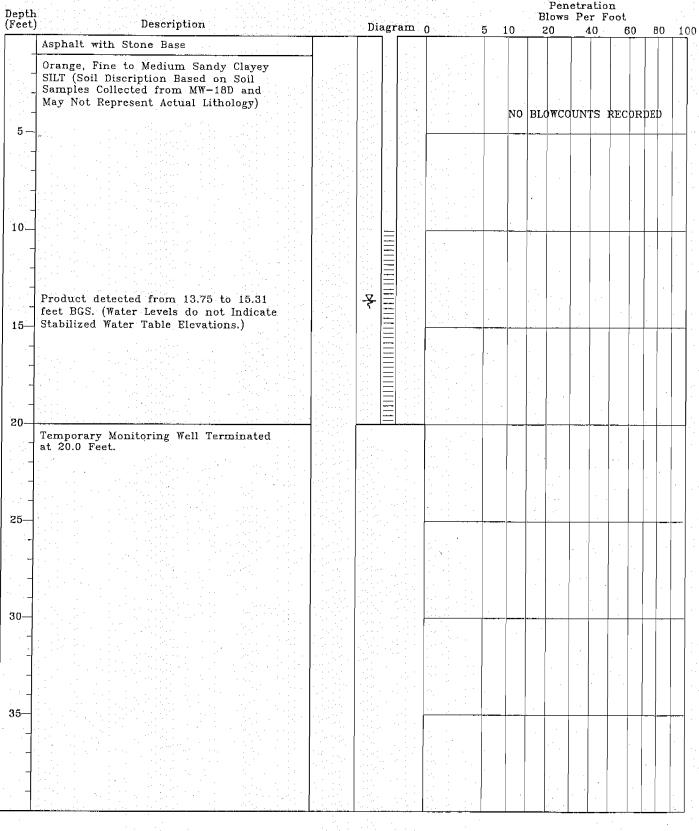
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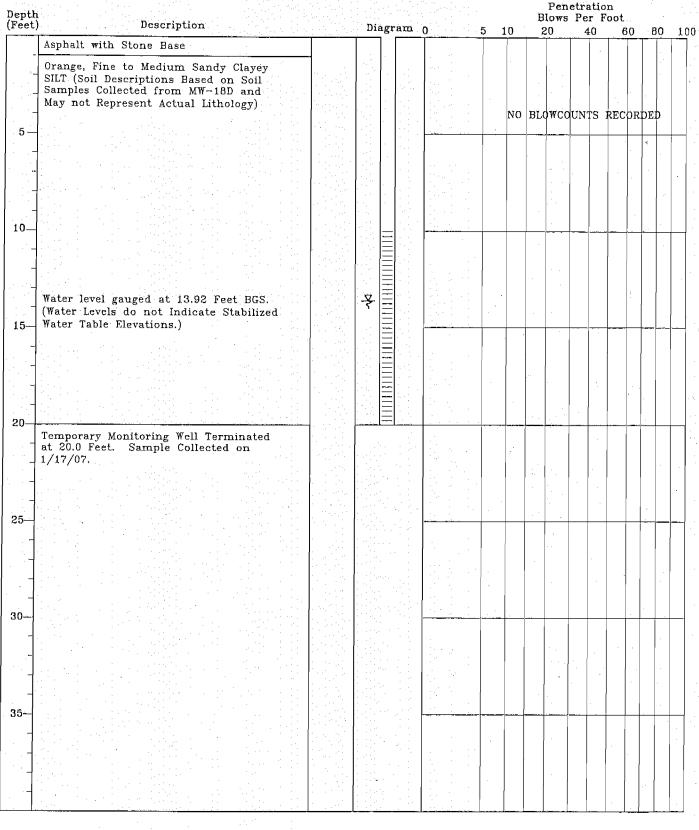




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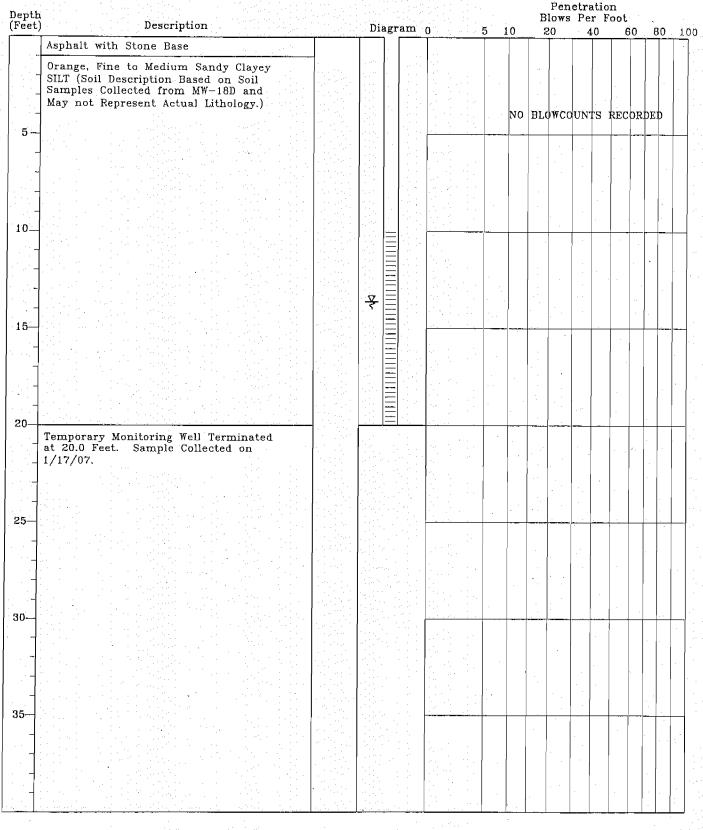
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Logged By:	J. Coleman

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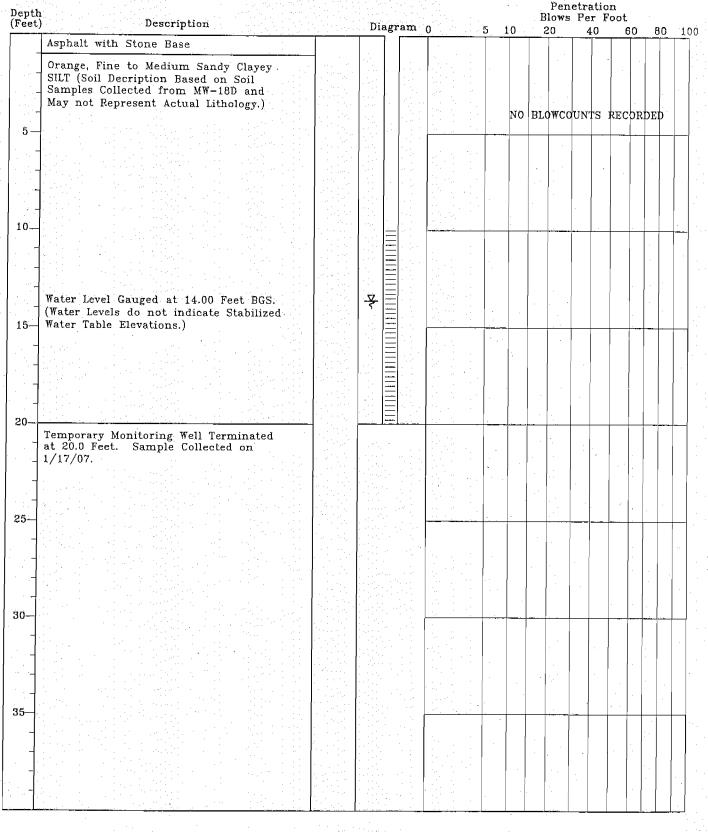
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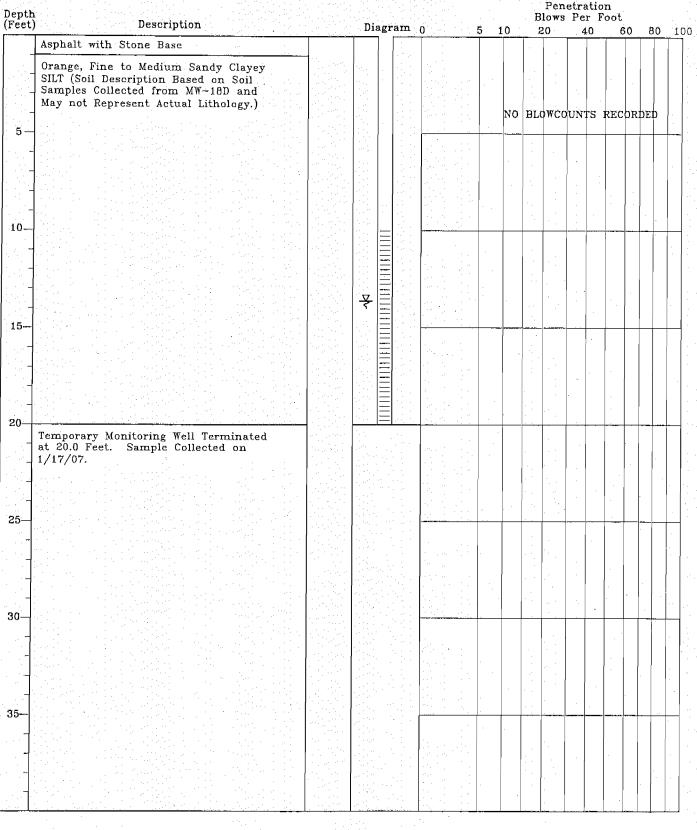
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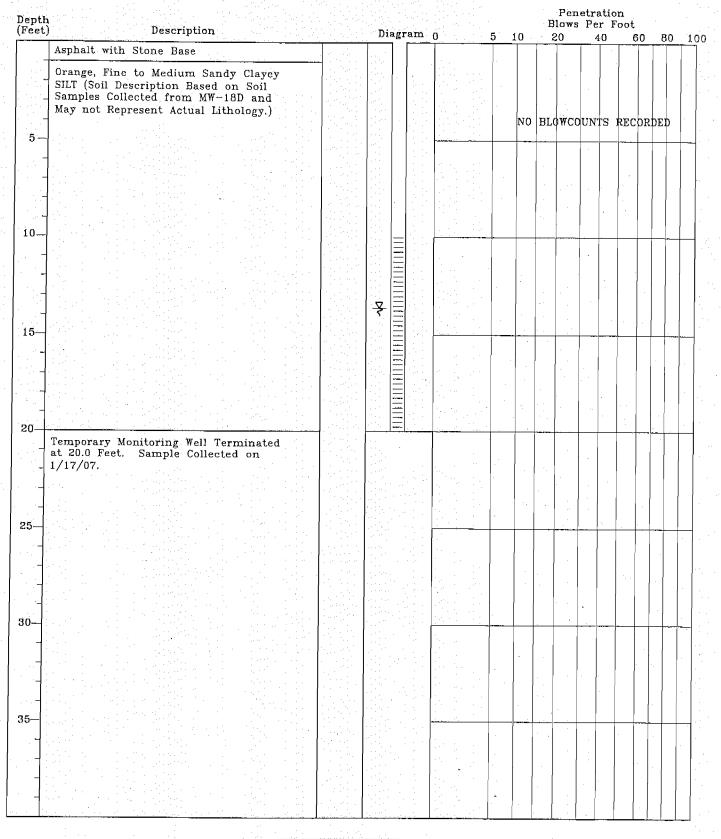
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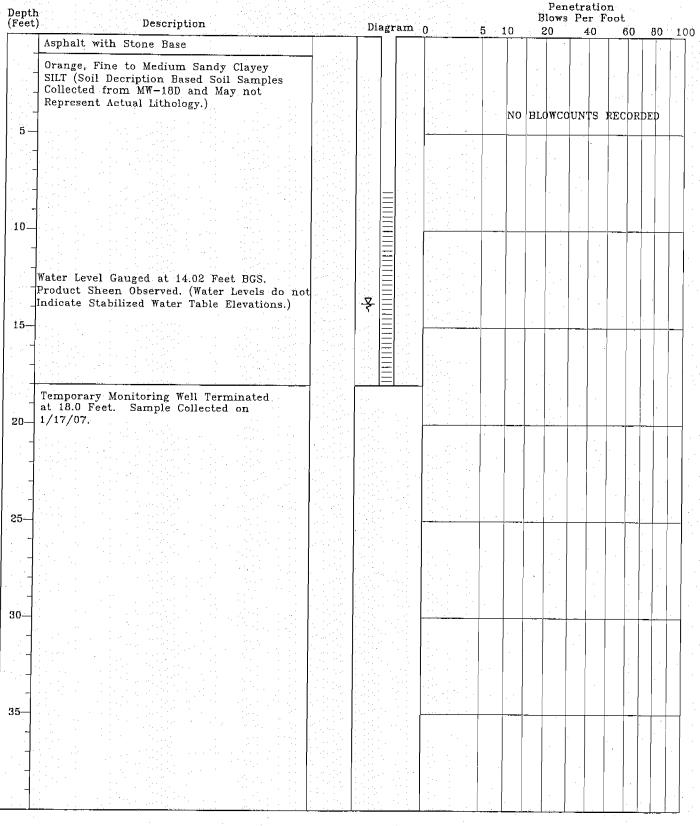
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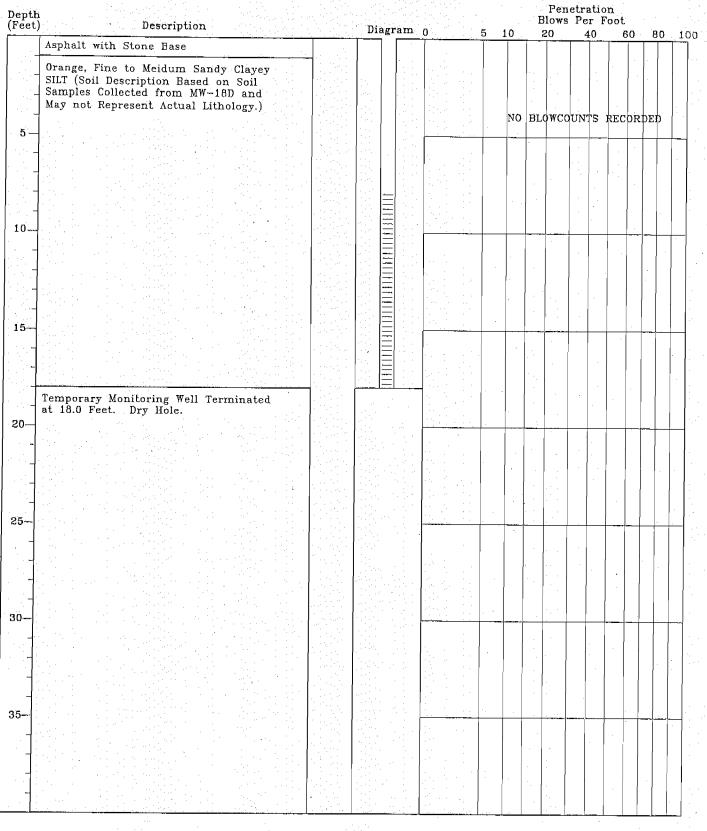
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253-B Dooley Road Lexington, 9outh Carolina 29073 (803) 808-2043 fax: 808-2048

Penetration Depth (Feet) Blows Per Foot Description Diagram 0 5 10 20 40 60 80 100 Asphalt with Stone Basc Orange, Fine to Medium Sandy Clayey SILT (Soil Description Based on Soil Samples Collected from MW-18D and May not Represent Actual Lithology.) NO BLOWCOUNTS RECORDED 5 10-Water Level Gauged at 13.96 Feet BGS. (Water Levels do not indicate Stabilized Water Table Elevations.) 15-20-Temporary Monitoring Well Terminated at 20.0 Feet. Sample Collected on 1/17/07. 25-30-35-

TEST BORING RECORD
Columbia Maintenance Facility
Columbia, South Carolina
SCDHEC Site ID* 07359
MECI Project Number 07-1122

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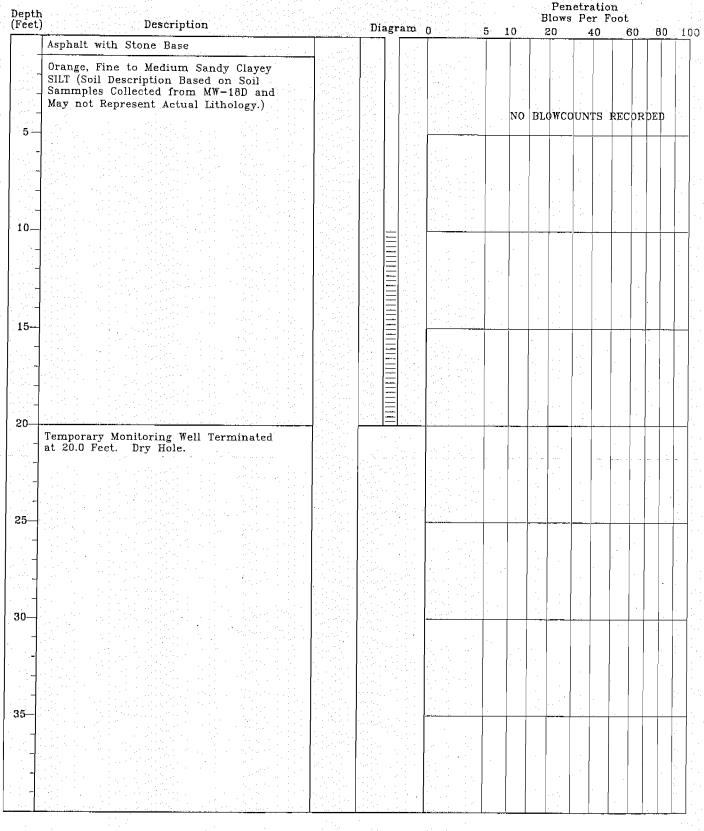
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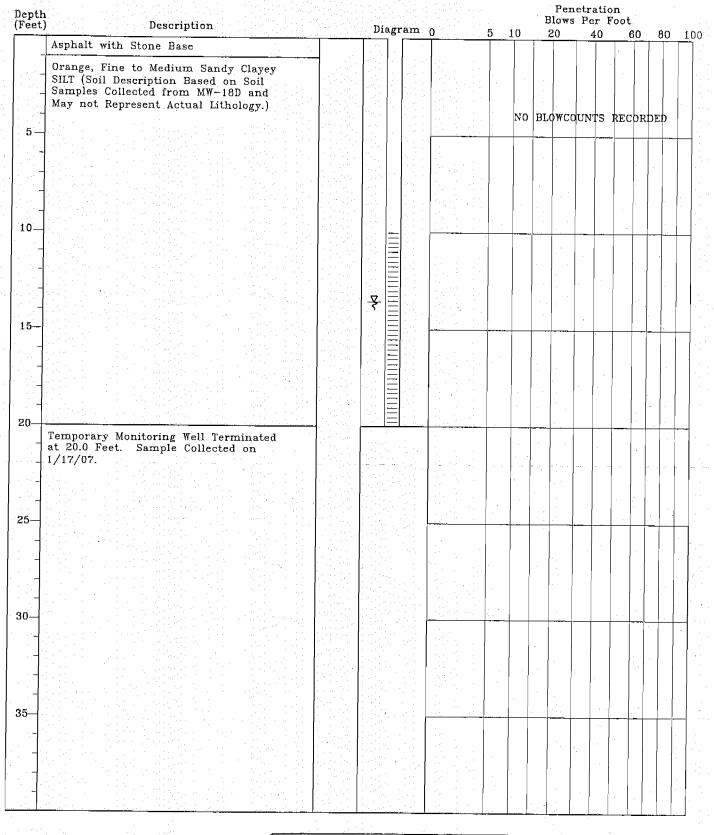


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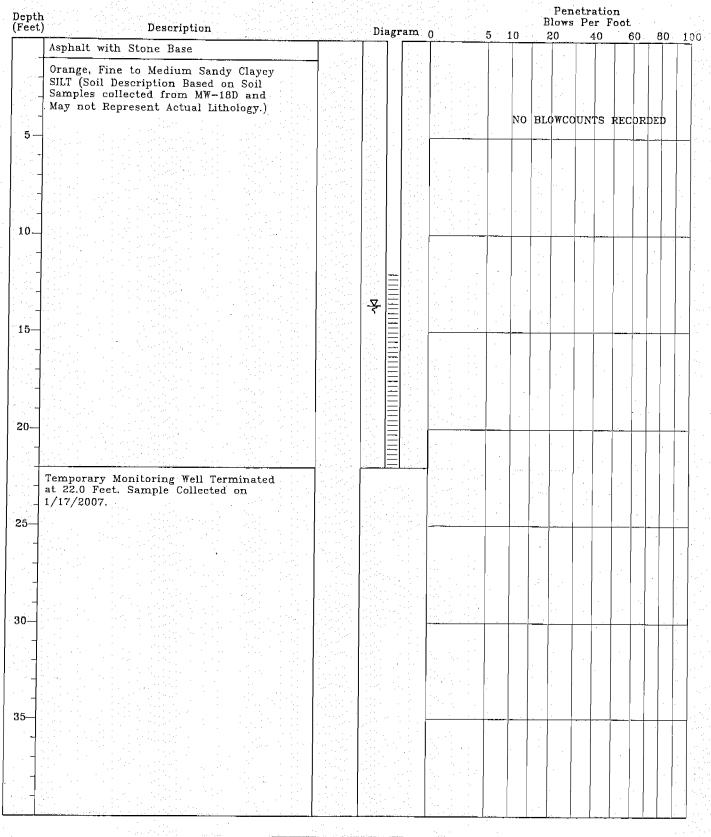
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Page: 30

(803) 808-2043 Fax: 808-2048



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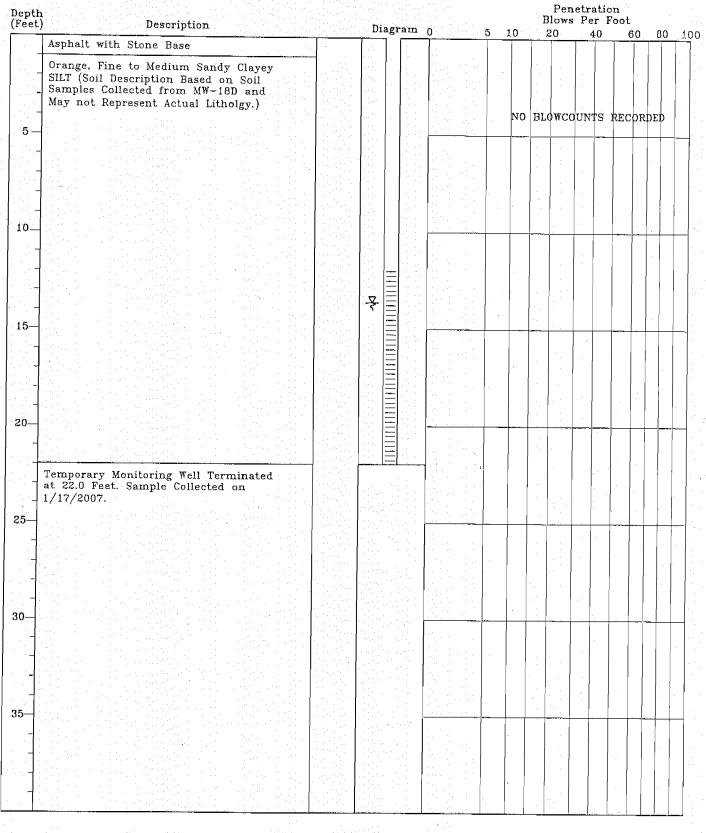
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Drilled By: Geologic Exploration Inc.
Logged By: J. Coleman

Prepared By:

Midlands

Environmental

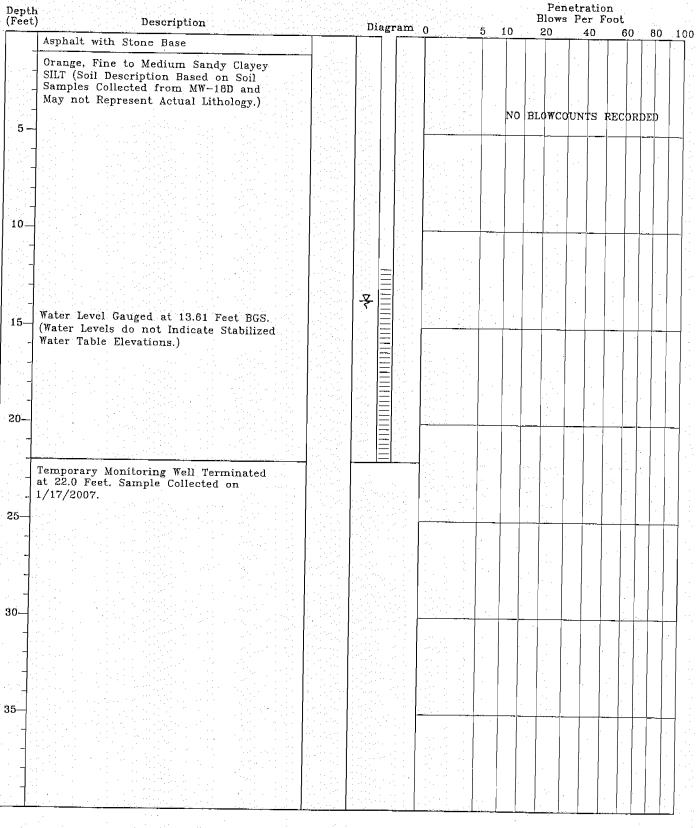
Consultants, Inc.



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Date Drilled:	1/17/2007
Drilled By:	Geologic Exploration Inc.
Logged By:	J. Coleman

Prepared By:

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Page: 33

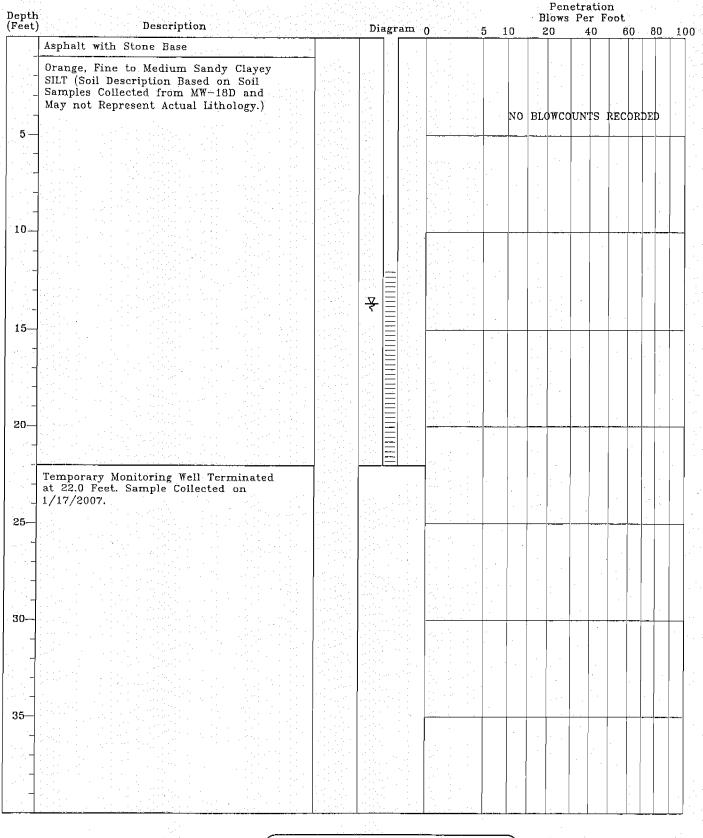


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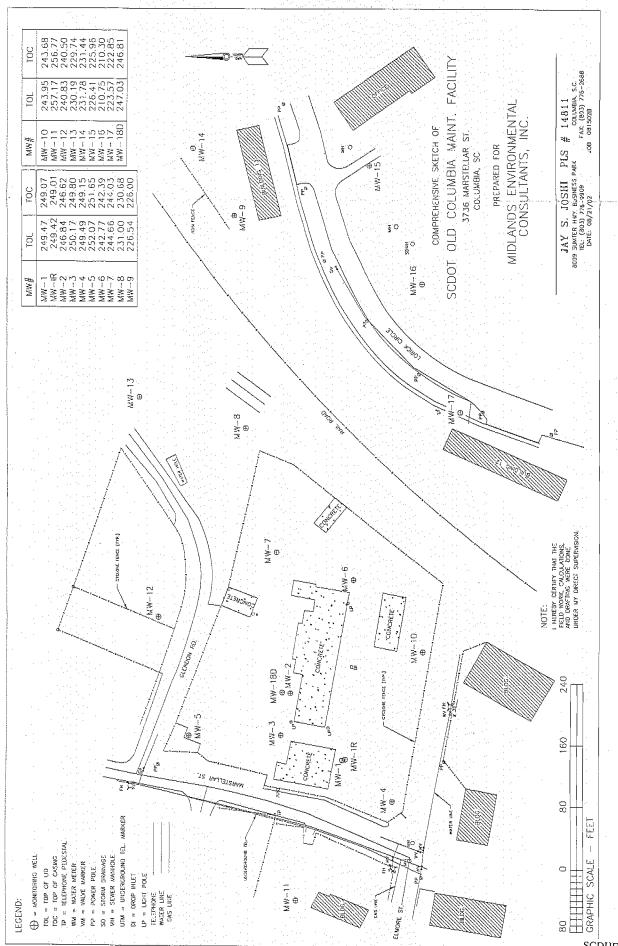
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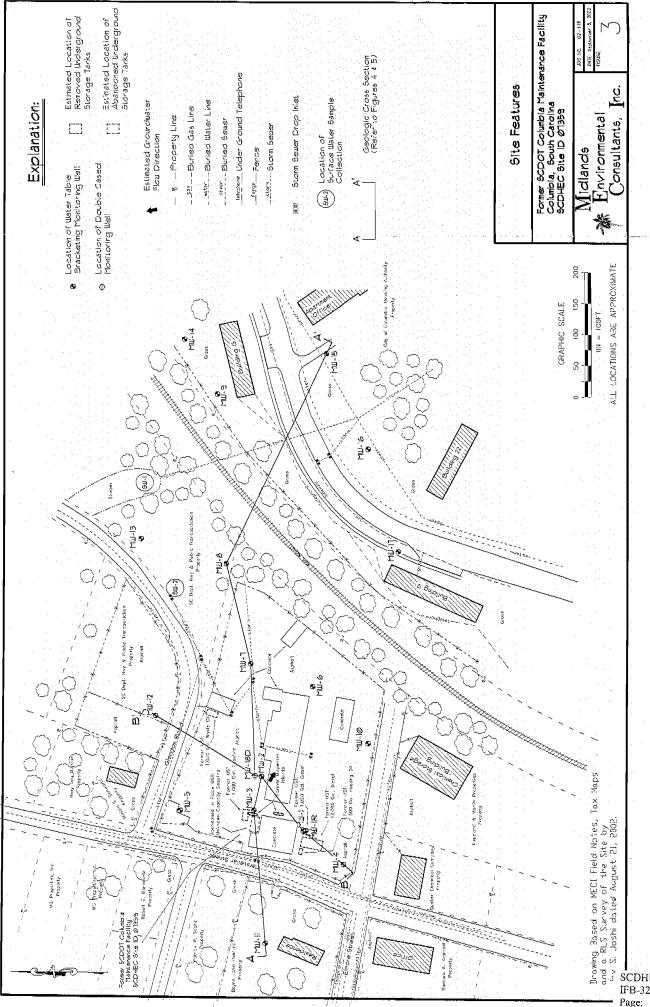
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Page: 34

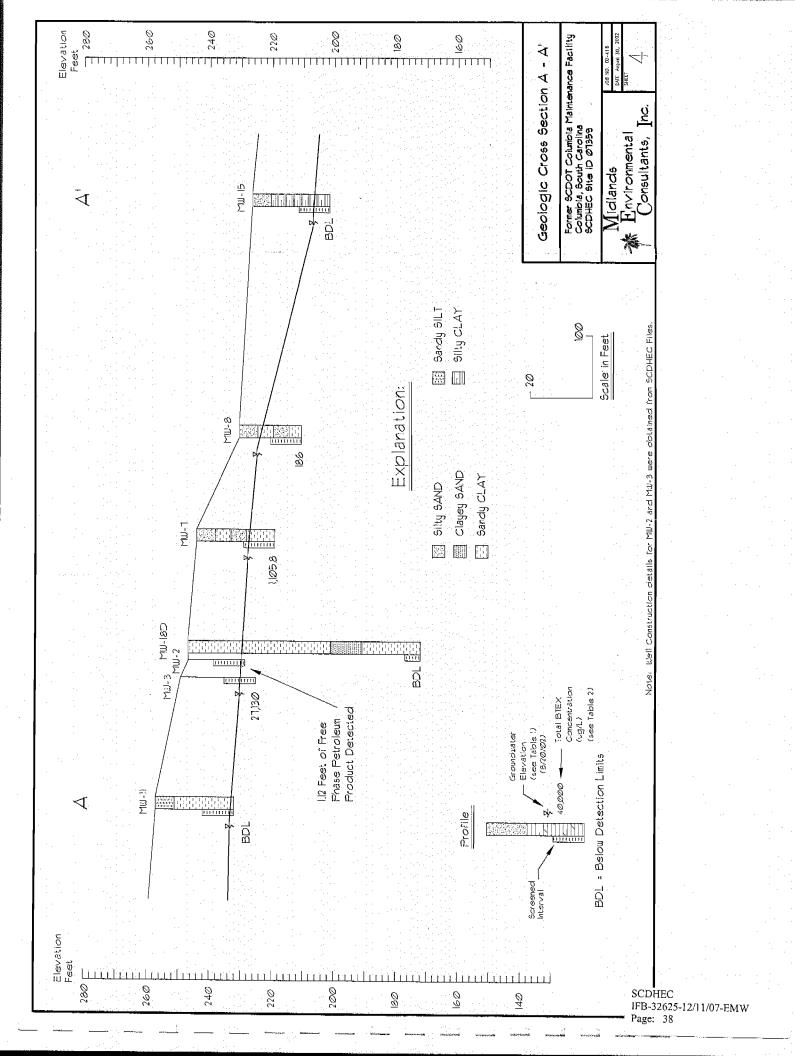


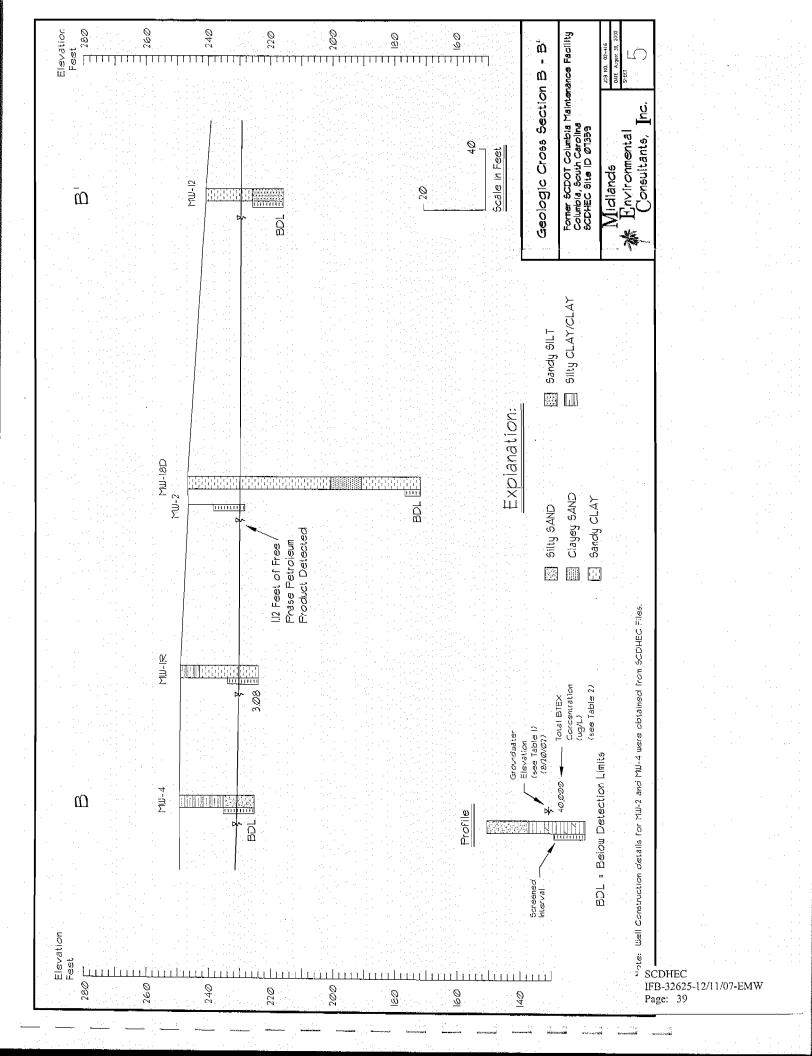
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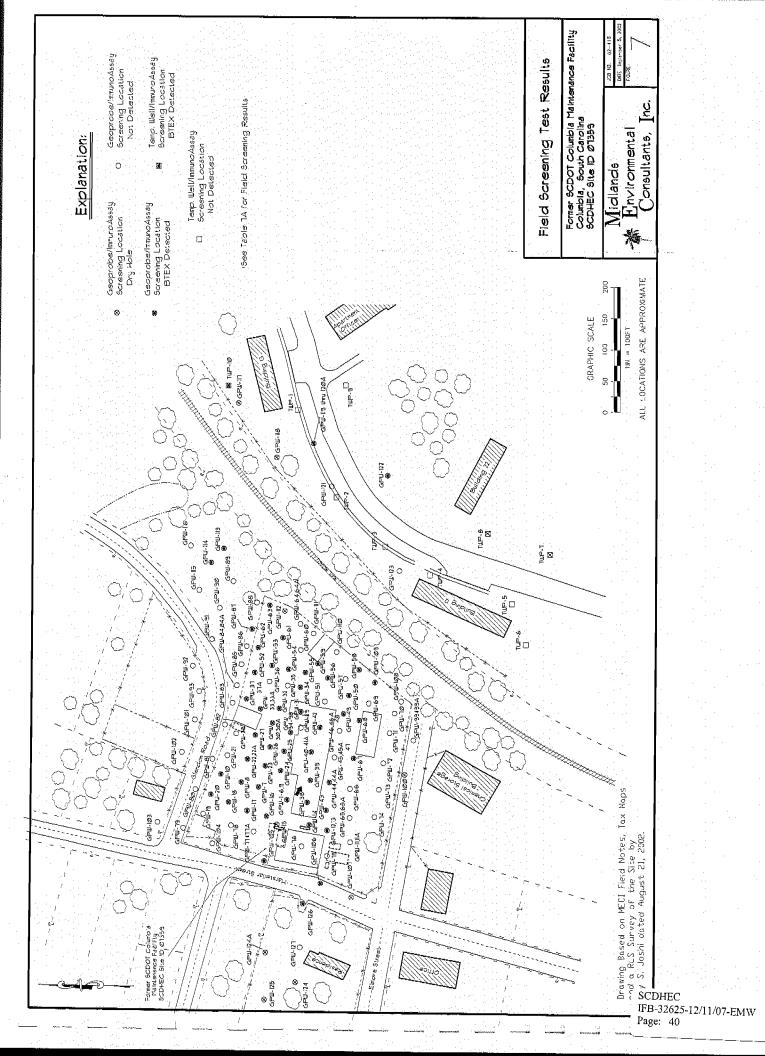
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bt/line Result Sample ID Depth (feet) Sesult Sample ID Depth (feet) Sesult Sample ID Oppul (feet) Sesult Sample ID Oppul (feet) Sesult Sample ID 1 194 GPW-37A 20-24 BDL GPW-67 20-24 0.03 GPW-104 0.06 GPW-106 GPW-106 GPW-106 GPW-106 GPW-106 GPW-106 GPW-106 <td< th=""><th></th><th></th><th></th><th></th><th>Immun</th><th>Immunoassay Screening Results</th><th>reening Ra</th><th>esults</th><th></th><th></th><th></th><th></th><th>1</th></td<>					Immun	Immunoassay Screening Results	reening Ra	esults					1
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25-29 0.3 GPW-37A 2.0 - 24 0.04 GPW-69 2.0 - 24 0.06 GPW-104 30-34 1.19 GPW-37A 2.10 - 25 0.04 GPW-70 2.0 - 24 BDI GPW-105 45-34 0.02 GPW-37A 2.0 - 24 0.24 GPW-71 2.0 - 24 BDI GPW-106 45-34 0.03 GPW-40 2.0 - 24 BPR HOLE GPW-71 2.1 - 25 BPR HOLE GPW-72 2.4 - 28 BDI GPW-106 21-25 0.24 GPW-74 2.2 - 26 BPR HOLE GPW-74 2.2 - 26 BDI GPW-106 21-25 0.76 GPW-74 2.2 - 26 BPR HOLE GPW-74 2.2 - 26 BPR HOLE GPW-75 21-25 BDI GPW-111 21-25 0.76 GPW-74 2.2 - 26 BPR HOLE GPW-77 21-25 BPR HO		20-24	1.94	CPW-35	20-24	108	GPW-67	24-28	1.05	GPW-102	23-27	3DL	
30-34 1:19 GPW-37A 21-25 0.04 GPW-86 20-24 BDL GPW-105 40-34 0.13 GPW-38 20-24 0.24 GPW-71 21-25 BDL GPW-105 40-44 0.02 GPW-40 21-25 BDL GPW-109 GPW-109 21-25 0.43 GPW-40 21-25 BPL GPW-109 GPW-109 21-25 0.43 GPW-40 21-25 BPL GPW-110 GPW-109 21-25 0.43 GPW-41 22-26 BPL 21-25 BDL GPW-109 48-52 PR 0.03 GPW-41 22-26 BPL GPW-110 GPW-110 21-25 0.74 GPW-41 20-24 3.88 GPW-77 21-25 BDL GPW-110 21-25 0.74 QPW-42 20-24 4.82 GPW-77 21-25 BDL GPW-111 21-25 0.74 QPW-42 20-24 4.82 GPW-77 21-25 BDL	Γ	25-29	0.31	GPW-37	20-24	DRY HOLE	CPW-68	20-24	90.0	GPW-103	2428	BDL	Ī
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21-25 BDL CPW-49 20-24 0.10 CPW-84A 11-15 BDL CPW-120A 21-25 0.09 CPW-50 20-24 0.03 CPW-85A 11-15 BDL CPW-120A 20-24 0.09 CPW-51 21-25 BDL CPW-85A 11-15 BDL CPW-121 20-24 0.05 CPW-52 20-24 1.66 CPW-85A 1.9-23 2.03 CPW-87 11-15 BDL CPW-123 20-24 0.05 CPW-54 1.8-22 1.57 CPW-89 11-15 BDL CPW-123 20-24 5.83 CPW-55 1.9-23 0.54 CPW-89 11-15 BDL CPW-124 20-24 5.83 CPW-55 1.9-23 0.13 CPW-89 11-15 BDL CPW-124 20-24 5.09 CPW-56 1.9-23 0.13 CPW-91 11-15 BDL CPW-125 20-24 BDL CPW-99 11-15 BDL CPW-91 1	80	21–25	0.02	GPW-48	27-31	3DF	CPW-84	8-12	DRY HOLE	GPW-119A	25-29	DRY HOLE	Ī
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21-25 BOIL GPW-51 21-25 BDI GPW-85A 11-15 BDL GPW-127 20-24 DRY HOLE GPW-52 2.0-24 1.46 GPW-86 11-15 BDL GPW-122 20-24 DRY HOLE GPW-53 19-23 2.03 GPW-87 11-15 BDL GPW-124 20-24 D.0.5 GPW-54 18-22 1.57 GPW-89 11-15 BDL GPW-124 20-24 D.0.5 GPW-55 19-23 0.54 GPW-99 11-15 BDL GPW-124 20-24 D.0.5 GPW-56 19-23 0.13 GPW-99 11-15 BDL GPW-124 20-24 D.0.5 GPW-56 1.92 0.13 GPW-99 11-15 BDL GPW-124 20-24 BDL GPW-99 11-15 BDL GPW-124 BDL GPW-124 BDL GPW-124 20-24 BDL GPW-99 11-15 BDL GPW-124 BDL GPW-124 <t< td=""><td>0</td><td>21-25</td><td>60'0</td><td>GPW-50</td><td>20-24</td><td>0.03</td><td>GPW-85</td><td>9-13</td><td>DRY HOLE</td><td>GPW-120A</td><td>29-33</td><td>100</td><td>Ť</td></t<>	0	21-25	60'0	GPW-50	20-24	0.03	GPW-85	9-13	DRY HOLE	GPW-120A	29-33	100	Ť
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1 20-24 BDI GPW-66 23-27 BDI GPW-101 20-24 BDL	_	20-24	0.62	GPW-65A	22-26	901	GPW-100	24-28	DRY HOLE	. 6-dM1	20	0.06	Т
707 707 707 707 707 707 707 707 707 707		20-24	BOL	GPW-68	23-27	108 1	GPW-101	20-24	108 1	- TWP-10	13 PR	0.02	\Box

Somples Collected on July 8 through July 30, 2002 PR = Probe Refusal Notes:

Field Screening Test Results

Former SCDOT Columbia Maintenance Facility Columbia, South Carolina SCDHEC Site ID @1359

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Environmental Consultants,

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Well	Sample Date	Dissolved: Oxygen (mg/l)	Dissolved CO ₂ (mg/l)	Temperature (° Celsius)	(Initial)	pH (Final)	Condu-	Conductivity (Final)	Ferrous Iron (mg/l)	Depth to Product	Product Thickness	Depth to: Water (feet)	Well-head Elevatíon	Groundwater Elevation
MW-1R	B/2C/2002	0.71	200+	23.1	5.60	5.61	76.6	5.59	3.4	*		18.65	249.01	230.65
MW-2	8/20/2002	R N	LN N	Ľχ	NT	Ā	Þ	N.	IN	15,82	1.12	15.94	246.62	230.63
MW-3	8/20/2002	0.58	200+	30.1	5.72	5.85	152.5	179.0	3.2.	1	1	19.05	249.80	230.75
MW	8/20/2002	2.65	100	30.7	4.80	5.23	125.3	126.7	0.0		1	17.51	249,15	231.64
MW-5	8/20/2002	0.77	125	23.1	5.37	5.43	48.7	73.2	0.0	1	1	20.08	251.65	231.57
NAW-6	8/20/2002	0.98	150	24.1	. 83 83	6.01	112.2	153.6	8.	1	·	15.15	242.39	227.24
7-W34	8/20/2002	0.68	200+	24.5	5,67	6.07	2410	2856	4.0			15.10	244.03	228.93
MW-8	9/20/2002	0.59	200+	25.4	6.22	5.25	1036	998	2.4	1	1.	4.38	230.58	226.00
9WW-9	8/20/2002	4.98	25	21.6	4.53	5.75	52.8	67.2	9.0	ì	I	B.24	226.D0	217.76
MW-10	3/20/2002	3.30	100	24.8	4.97	5.50	71.9	83.0	0.0	1		14.22	243.58	229.46
MWL11	8/20/2002	3.70	E)	21.5	6.70	5.29	115.4	119.0	0.3	***	1	23.80	256.77	232.97
MW-12	8/20/2002	3.44	9	26.5	5.52	6.07	92.0	75.3	0.2	1		10.02	240.50	230,48
MW-13	6/20/2002	3.50	\$\$	25.1	5.44	5.89	77.8	102.1	2.0		1	3.04	229.74	226.70
MW-14	8/20/2002	1.84	9	21.8	\$.06	6.08	54.5	98.0	2.5		11	7.90	231.44	223.54
NW-15	8/20/2002	3.70	90	25.8	6.43	6.06	97.6	91.3	0.2	ř	1.	18.76	225.96	207.20
MW415	8/20/2002	2.19	40	21.2	6.62	6.92	128.4	159.1	0.0	1	1	5.23	210.30	205.07
MW-17	8/20/2002	2.14	95	22.5	2.50	6.46	76.2	162.7	0.0	1	1	8.55	222.85	214.29
ANY-18D	8/20/2002	1.67	20	27.4	97.6	6.36	275.1	133.7	0.2	1	1	36.89	246.61	209.92
Noles:		par kler.				5. Dissolved oxyge	5. Dissolved oxygen, dissolved carbon dioxide, initial pH, initial conductivity	dioxide, initiat pH, in	itial conductivity,					
	 Elevations are refe Groundwater depti 	Elevations are referenced to an assumed site datum (See Figure 2). Groundwater depths were measured from the top of the PVC user pipe.	um (See Figura 2). of the PVC riser pipe.			and lemperatur 6. NW-2 containe	and temperature measurements obtained 8/19/02. MW2 contained measurable amount of free phase petroleum product.	ained 8/19/02 it of free phase petro	aleum product.					
	4. Groundwater feve.	Groundwater fevels measured 5/20/02.				7. Groundwater else and MT-MM Testant	evation for MW-2 was	s corrected for free	product based upon a spr	coundwater elevation for MW-2 was corrected for tree product based upon a specific gravity for fusi of 0.85. T- that Toeloof	ir.			

Dissolved oxygen, dissolved carbon dioxide, initial pH, initial conductivity,
and temperature measurements obtained #15802.
 RW2-conditined measurable amount of free phase petroleum product.
 Groundwater elevation for RW72 was corrected for free product based upon a specific gravity for fuel of 0.83.
 NT=Not Tested.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
FORMER SCDOT COLUMBIA MAINTENANCE FACILITY
COLUMBIA, SOUTH CAROLINA
MECI PROJECT NUMBER 02-416
SCDHEC SITE ID NUMBER 07359

200			de																	<u> </u>	
יו משפוניי	Lead (µg/l)	901	F.	54	900	BD1.	10B	26	200	8	급	94	. BDL	급	B	JGI	108	뮵	9	Þ	. N
	Sulfate (mg/l)	10	Z	то	ι σ	ю	ю	14	5	w	2	ю	ь	w	2	w	6 5	ம	\$	₹	된
	Nitrate (mg/l)	7.0	N .	9.0	0.6	0.8	108	BDL	BDL	10	70g	5.2	<u>1.</u>	6.0	1.7	6	0.7	8	0.3	k	- <u>F</u>
	Naphthalene (µg/l)	BDE	1,150	715	108	BOL	51.2	48.3	1.30	- 10g	BDL	BDL	BD1_	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
	EDB (µg/l)	JOB	380	22	BDL	BDL	10	0.11	BDL	TOB	708	BDL	108	708	BD[BDL	108	BDL	807	BDL	BDL
	MTBE (l/g/l)	BDL	408	416	BD1.	BDL	1.99	87.7	261	BDL	BDL	BDL	807	10B	108	BDL	BDL	BDL	708	BDL	BDL
	Total BTEX (μg/l)	3.08	92,260	27,130	BDL	57.40	99,76	1,105.8	186.00	708	BDL	BOL	BOL	BDL	BOL	BOL	BDL	108	BDL	BOL	BOL
	Totaí Xylenes (ug/li	1.82	17,670	7,570	BDL	12.99	3,330	131.2	7.49	HOI-	BDL	BDL	BDL	BDL	BDL	BDL	BOL	BDL	· JOB ·	BDL	801
	Ethylbenzene (µg/l)	BDL	3,190	1,470	BDL	1.41	626	107	4.03	8DL	BDL	108 80F	BDL	BDL	BDL	BDL	BDL	BDL	BDL	108	BDL
	Toluene (µg/l)	BOL	41,300	12,500	BOL	17.3	1,710	72.6	3.48	BDL	IQB.	BDL	906	BDE	BDL	BDC	BOL	BDL	- BDL	BOL	BDL
	Benzene (l/gr/)	1.26	30,100	5,590	BDL	25.7	1,100	795	171	708	BDL	BDI	BDL	708	708	708	BDL	BDL	108 1	BDI	BDL
	Sample Date	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	08/20/02	07/25/02	07/25/02
	Well	MW-1R	MW-2	MW-3	MW-4	MW-5	MW-6	Z-WW	MW-8	WW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18D	SW-1	SW-2
																					-

\$5000

5. See Appendix B for Laboratory Detection Limits 6. NT=Not Tested

Notes:

1. BDL = Befow Practical Quantitative Limits
2. µg/f = micrograms per liter
3. mg/f = milligrams per liter
4. MTBE = Methyt-Tertiary-Butyl Ether

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GRAIN SIZE DISTRIBUTION TEST REPORT (ASTM D422)

2633 MW-3 : Orangish COARSE	MW-3 DEPTH / ELEV. 9-71 Ft. SAMPLE NO. SAMPLE TYPE	OO NAMES	Ι.			
Number N	### 1933 REPORT NO.: #### 2933 REPORT NO.: #### 2933 REPORT NO.: #### 2033 REPORT NO.: ### 2034 REVIEWUS BY: ### 2	ň	١.	ᄼ		
Consists Brown Clayey Fine to Medium SAND	Coarse Fine Coarse Coa		2633			REVIEWED BY:
SP. GRAVITY, GS: Coloragish Brown Clayey Fine to Medium SAND Binest W. 11.9 FINES W. Dao, MM :	Coangish Brown Clayey Fine to Medium SAND		MW-3		SAMPLE NO.:	
NI. Orangish Brown Clayey Fine to Medium SAND - PLASTICITY INDEX, % :	NI. Orangish Brown Clayery Fine to Medium SAND - PLASTICITY INDEX, %: - MOISTURE, %: 11.9 FINES, %: 1 - D30, MM : - D60, MM : - COEFF. OF CURVATURE, CG.: COEFF. OF UNIFORMITY, CQ.: COEFF. OF UNIFORM COEFF. OF UNIFORMITY, CQ.: COEFF. OF UNIFORMITY, CQ.: COEFF. OF	SAMPLE LOCATION:				
- PLASTICITY INDEX , % : - MOISTURE , % : 11.9 FINES , % : - D39, MM : - COEF. OF CRIVATURE , C _c : - D39, MM : - COEF. OF UNIVER, C _c : - D40, MM : - COEF. OF UNIVER, C _c : - D50, MM : - COEF. OF UNIVER, C _c : - COER. OF UNIVERMITY , C _c : - COER. OF UNIVERMITY , C _c : - COER. OF UNIVERMITY , C _c : - COER. OF UNIVERMITY , C _c : - COEF. OF UNIVERMITY , C _c : -	PLASTICITY INDEX. WOISTURE W. 11.9 FINIES W.	DESCRIPTION: Ora	angish l	Brown Clayey Fine to Medium SAND		, Gs :
COARSE FINE COARSE MEDIUM FINE SULT COEFF. OF CURVATURE, Co. S. COARSE MEDIUM FINE SILT CLAY COARSE MEDIUM FINE SILT CLAY CLAY COARSE MEDIUM FINE SILT CLAY	D30, MM :	JQUID LIMIT, %:	1	Y INDEX ,	: % :	
GRAVEL SAND FINE SULT COERS MEDIUM FINE SULT COERF. OF UNIFORMITY, C _Q : COARSE MEDIUM FINE SULT COERF. Out 27 STATE A COERF. Out 27 S	GRAVEL GRAVEL COARSE MEDIUM FINE COARSE NO SENT	, MM :	,			-
GRAVEL SAND FINE SILT CLAY COARSE FINE COARSE MEDIUM FINE SILT CLAY COARSE FINE CLAY COARSE FINE SOLD CLAY COARSE FINE SOLD CLAY COARSE FINE SOLD CLAY COARSE FINE SOLD CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FINE COARSE FINE CLAY COARSE FIN	COARSE FINE SAND FINE SLIT CLAY	CLASSIFICATION	 - -			••
COARSE FINE SILT CLAY COARSE MEDIUM FINE SILT CLAY COARSE MEDIUM FINE SILT CLAY COARSE MEDIUM FINE COARSE	100 T SOURCE FINE SOLT CLAY COARSE MEDIUM FINE SILT CLAY		GR/		AND	FINES
20 20 20 20 20 20 20 20 20 20 20 20 20 2	100 To State	00	ARSE	FINE COARSE MEDIUM		
	50 60 50 60 70 70 100 100 100 100 100 100 100 100		3/4"	## SIEVE # 10 SIEVE		
20 00 02 00 00 00 00 00 00 00 00 00 00 0	20 0 0 0001 0 0001					
	20 0001 0.0000 0.0000	06				
	20 40 60000 100000 10000 00010					
	20 30 10 10 10 100000 10000 10000 10000	200				
	20 20 100.000 10000 10000 10000 10000 10000 10000 10000	02				EIGHT
20 40 50	20 20 100.000 1,0000 0,001	000				M A
2 0 0 0	30 20 10 10 10 100:000 10:000	20				8 B
	20 100.000 0.100 0.001				*	NIE 9
0	0.100					6
	0.000	29				
	1,000 0.100 0.010	01				

GRAIN SIZE DISTRIBUTION TEST DATA SHEET (ASTM D422) ORE" JOB NAME : SCDOT - Columbia Maintenance OB NO. : 2633 REPORT NO. : DATE: 9/1/00 REVIEWED BY: JRING / PIT NO. : MW-3 DEPTH / ELEV. : 9-11 Ft. SAMPLE TYPE ; Jar SAMPLE NO.: SAMPLE LOCATION: SOIL DESCRIPTION: Orangish Brown Clayey Fine to Medium SAND SP. GR., Gs: 2.6 LIQUID LIMIT . % : PLAS. INDEX . %: MOISTURE, %: -11.9 FINES, %: 26 D₁₀ , MM : D30, MM: COEF. OF CURV ., Cc : D60, MM: _ CLASSIFICATION UNIFIED: SM AASHTO: COEF. OF UNFOR. , Cu : SPLITTING AIR DRIED / AS RECEIVED MATERIAL ON # 10 SIEVE AIR DRIED WEIGHT OF TOTAL SAMPLE 140.3 **GRAMS** PAN / BEAKER NO. : AIR DRIED WEIGHT RETAINED ON # 10 SIEVE 32.04 **GRAMS** PAN / BEAKER NO. : (WASHED)OVEN DRIED WT. RETAINED ON # 10 28.1 **GRAMS** PAN/BEAKER NO. : AIR DRIED WEIGHT PASSING ON # 10 SIEVE 112.2 **GRAMS** EQUIVALENT OVEN DRIED WT. PASSING # 10 100.18066 GRAMS MOISTURE ON AIR DRIED / AS RECEIVED MATERIAL PASSING # 10 PAN NO.: WT. OF PAN (GRAMS) 100.50 **GRAMS** AIR DRIED SOIL+ PAN (GRAMS) 215,60 **GRAMS** OVEN DRIED SOIL+ PAN (GRAMS) **GRAMS** 203.27 % MOISTURE 11.998 % AIR DRIED / AS RECEIVED MATERIAL FOR SIEVE & HYDROMETER ANALYSIS BEAKER NO. : AIR DRIED MATERIAL PASSING # 10 115.1 GRAMS OVEN DRIED MATERIAL PASSING # 10 GRAMS 102.77 OVEN DRIED MATERIAL REPRES. THE WHOLE SAMPLE 122.06 GRAMS WEIGHT MATERIAL PARTICLE **MATERIAL** SIEVE ANALYSIS DATA RETAINED RETAINED DIAMETER **PASSING** SIEVE SIZE (GRAMS) (MM) % 3" 0.00 0.00 75.00 100,00 2" 0.00 0.00 50.00 100.00 1 1/2' 0.00 0.00 37,50 100.00 **COARSER THAN # 10 SIEVE** 0.00 0.00 25.00 100.00 3/4" 0.00 0.00 19.00 100.00 3/8" 0.00 0.00 9.50 100.00 #4 7.83 6.10 93.90 4.75 #10 20.27 15.80 2.000 84,20 # 20 16.16 29.04 0.850 70.96 **FINER THAN # 10 SIEVE** #40 33.76 43.46 0.425 56,54 # 60 50,71 57.35 0,250 42.65 #100 63.00 67.42 0.150 32,58

200

SCDHEC

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34.0

33.0

33.0

33,0

32.5

32.0

31.0

READING

(Uncorrted)

9/13/00

Date &

Time

9:30

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5

5

5

5

Zero

CORR.

22.8

22.8

22.8

22.9

22.9

22.9

22.8

Temp °C 1

2

5

15

30

60

ELAPSED TIME

(MINUTES)

1440

71.02

HYDROMETER DATA

IFB-32625-12/11/07-EMW

73.99

0.075

0.0457

0.0325

0.0206

0.0119

0.0084

0.0060

0.0012

26.01

24.16

23.33

23.33

23.33

22.91

22,50

21.66

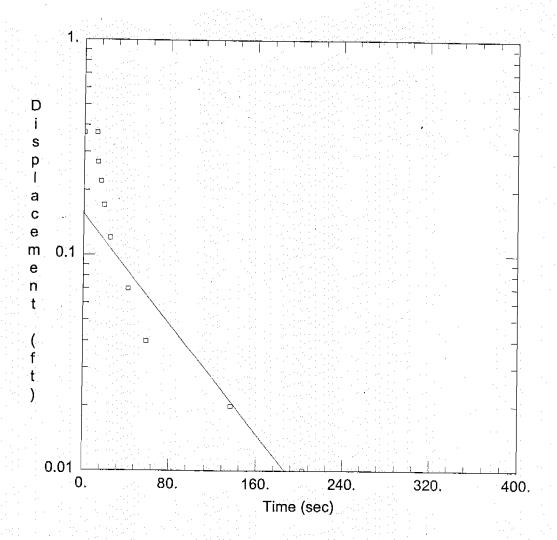


DHEC 3531 (07/1999)

Summary of Slug Test Division of Underground Storage Tank Management

	and the second s
Site Data	
UST Permit #: <u>07359</u> County:	Richard
UST Permit #: 07359 County: Facility Name: SCDOT - DIL Columbia Maintenance	Facility
Slug Data	
See Appendix Table Figure level logs, etc. (complete as appropriate)].	for a list of all data measurements. [water
Water Level Recovery Data was measured by <u>Manually</u> with Water [Hermit Data Logger, Manually with Water Level Indicator, etc. (list method)].	er level indicator
Complete the following table for each well tested.	
COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED	
Slug Test Conducted in Well(s) Number MW-4 MW-5	
Initial Rise/Drawdown in Well (feet)	
Radius of Well Casing (feet) 0.083 0.083	
Effective Radius of Well (feet) 0.33 0.33	
Static Saturated Aquifer Thickness (feet) 30 30	
Length of Well Screen (feet)	
Static Height of Water Column in Well (ft) 6.71 5.23	
Calculations	· · · · · · · · · · · · · · · · · · ·
See Appendix Tablefor	calculations (complete as appropriate)
The method for aquifer calculations was Bouwer - Rice	(i.e. Bouwer-Rice, Cooper, etc.).
	(200
Calculated values by well were as follows:	
Slug Test Conducted in Well(s) Number MW-4 M.	W-5
Hydraulic Conductivity 9.02 x/0-5 ft/sec 2.07x	10 ft/sec
Thickness of the aquifer used to calculate hydraulic conductivity was 30.	feet,
The aquifer is confined semi-confined v	vater table (check as appropriate).
The estimated seepage velocity is 285	feet per year based on
a hydraulic conductivity of 7.8 ft/day, a hydraulic gradie	ent of, and, and
a porosity of 25 percent for clayey sand soil (list	type i.e., silty sand ,clav. etc).
	SCDHEC 16B-32635 12/11/07 FMW

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SCDOT OLD COLUMBIA MAINTENANCE

Data Set: F:\USERS\GENE\SCDOT\2633MW4.AQT

Date: 09/15/00 Time: 10:05:23

PROJECT INFORMATION

Company: QORE Property Sciences

Client: SCDOT Project: 2633

Test Location: Columbia, South Carolina

Test Well: MW-4

Test Date: August 21, 2000

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.37 ft Water Column Height: 6.71 ft Casing Radius: 0.083 ft Wellbore Radius: 0.33 ft Wellbore Radius: 0.37 ft Gravel Pack Porosity: 0.37

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IFB-32625-12/11/07-EMW

SOLUTION Page: 47

Aquifer Model: Unconfined

K = 9.017E-05 ft/sec

Data Set: F:\USERS\GENE\SCDOT\2633MW4.AQT

Title: SCDOT Old Columbia Maintenance

Date: 09/15/00 Time: 10:05:29

PROJECT INFORMATION

Company: QORE Property Sciences

Client: SCDOT Project: 2633

Location: Columbia, South Carolina

Test Date: August 21, 2000

Test Well: MW-4

AQUIFER DATA

Saturated Thickness: 30 ft Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-4

X Location: 0 ft Y Location: 0 ft

Observation Data

Time (sec)	Displacement (ft)

1	2.		0.37

-			
1	3.		0.27

345. 0.

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

SCDHEC IFB-32625-12/11/07-EMW

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^{203. 0.01}

Parameter

Estimate

Κ

9.017E-05 ft/sec

γ0

0.155 ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter

Estimate

Std. Error

K

0.0004716

8.738E-05 ft/sec 0.1737

y0

0.814

ft

Parameter Correlations

K y0 K 1.00 0.97

y0 0.97 1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.006616 ft^2 Variance 0.000827 ft^2

Std. Deviation..... 0.02876 ft

Mean 0.008036 ft

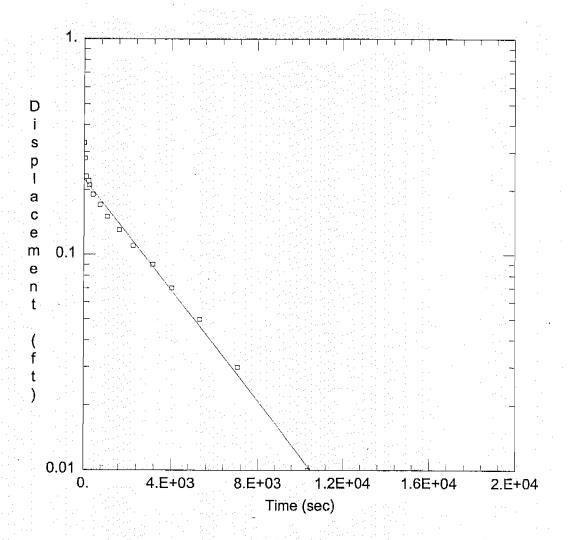
No. of Residuals ... 10

No. of Estimates ... 2

SCDHEC

IFB-32625-12/11/07-EMW

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SCDOT OLD COLUMBIA MAINTENANCE

Data Set: F:\USERS\GENE\SCDOT\2633MW5.AQT

Date: 09/15/00 Time: 09:53:36

PROJECT INFORMATION

Company: QORE Property Sciences

Client: SCDOT Project: 2633

Test Location: Columbia, South Carolina

Test Well: MW-5

Test Date: September 12, 2000

AQUIFER DATA

Saturated Thickness: 30. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.33 ft Water Column Height: 5.23 ft Casing Radius: 0.083 ft Wellbore Radius: 0.33 ft Wellbore Radius: 0.33 ft Gravel Pack Porosity: 0.37

SOLUTION

Aquifer Model: Unconfined K = 2.074E-06 ft/sec

SCDHEC

IFB-32625-12/11/07-EMW Page: 50 Data Set: F:\USERS\GENE\SCDOT\2633MW5.AQT

Title: SCDOT Old Columbia Maintenance

Date: 09/15/00 Time: 09:53:44

PROJECT INFORMATION

Company: QORE Property Sciences

Client: SCDOT Project: 2633

Location: Columbia, South Carolina Test Date: September 12, 2000

Test Well: MW-5

AQUIFER DATA

Saturated Thickness: 30 ft Anisotropy Ratio (Kz/Kr): 1

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW-5

X Location: 0 ft Y Location: 0 ft

Observation Data

0000114	tion Data
Time (sec) [Displacement (ft)
14.	0.33
44.	0.28
105.	0.23
215.	0.22
254.	0.21
416.	0.19
734.	0.17
1080.	0.15
1623.	0.13
2256.	0.11
3152.	0.09
4030.	0.07
5306.	0.05
7057.	0.03
1.037E+04	0.01
1.242E+04	0.

SCDHEC

IFB-32625-12/11/07-EMW

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SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter Estimate Κ 2.074E-06 ft/sec

y0 0.2247 ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter Estimate Std. Error 2.748E-06 K 3.968E-07 ft/sec y0 0.258 0.01222 ft

Parameter Correlations

K y0 K 1.00 0.54 y0 0.54 1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.01011 ft² Variance 0.0007222 ft² Std. Deviation..... 0.02687 ft Mean 0.002244 ft

No. of Residuals ... 16 No. of Estimates ... 2

> SCDHEC IFB-32625-12/11/07-EMW

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2

SUMMARY	of SLUG TES	ST (page 1	of 2)		<u> </u>	
Department of Health	OUTH CARO		ntrol (DHEC	C)		
Site Data						-
SITE ID#	COUNTY		Richland			
FACILITY NAME Former SCDOT M	aintenance F	acility		· .		
SLUG DATA	100 100 100					_
See AppendixTable (water level logs, etc.)(Complete Water Level Recovery Data was measured by (Hermit Data Logger, Manually w Complete the following table for each well teste	with Water Le	ate). ORS Interfevel Indicato	face Probe or, etc.)(List	Method)	neasurements	j.
COMPLETE A SECOND SHEET		HAN FOUR	WELLS AF	RE TESTE	D	
Slug Test Conducted in well(s) number Initial Rise/Drawdown in well (feet)	MW-6 4,55	MW-7 4.40	MW-8 8.82			
Radius of well casing (feet) Effective Radius of Well (feet) Static Saturated Aquifor Thickness (feet)	0.083 0.75	0.083	0.083			
Static Saturated Aquifer Thickness (feet) Length of Well Screen (feet) Static Height of Water Column in Well (ft)	9,85 12 9,85	9.90 12 9.90	15.32 12 15.32			
Calculations				· · · · · · · · · · · · · · · · · · ·		
See Appendix Table The method for aquifer calculations was Calculated values by well were as follows:	Figure NAVFAC		for calculati	ions		
Slug Test Conducted in Well(s) number Hydraulic Conductivity	MW-6 2.51E-06	MW-7 4.75E-04	MW-8 1.55E-04		cm/sec	
Thickness of the aquifer used to calculate hydra The aquifer is confined SEE SHEET 3		- · · · · · · · · · · · · · · · · · · ·			s Appropriate)).
The estimated seepage velocity is 86 2.11E-04 cm/sec, a hydraulic gradient of bercent for Silty SAND soil.	_feet per yea 5.14E-02				ity of	
	ARY of SI U	C TECT	er fra en en en en en en en en en en en en en		er er er er er er er er er er er er er e	

Groundwater Seepage Velocity Calculations (page 2 of 2) SOUTH CAROLINA Department of Health and Environmental Control (DHEC) Site Data SITE ID# 07359 COUNTY Richland **FACILITY NAME** Former SCDOT Maintenance Facility Hydraulic Conductivity (average) Hydraulic Conductivity Average = 2.11E-04 cm/sec (MW-6,MW-7 &MW-8) 5.98E-01_ft./day 4.15E-04 ft./min Groundwater Seepage Velocity V = (Ki)/(Ne)* Enter Values in Shaded Areas Only (ft./day) where: K = Hydraulic Conductivity (ft./day) I: = Hydraulic Gradient (ft./ft.) Ne = Effective Permeability K≃ 5.98E-01 ft./day | = 5.14E-02 ft./ft. 0.13 Ne = **2.4E-01** ft./day ft./year **Groundwater Seepage Velocity Calculations**

Inflow for Condition A Well MW-6.xls

Inflow Permeability Calculation

Former SCDOT Columbia Maintenance Facility

				Test Performed: 8/20/02							
	لمالما لمالما والخروا ورؤره خرؤره	W-6		Type II (Uncased Well)							
Static:	15.15	ft		*Enter Values in Shaded Areas Only							
Time (min)	Depth	delta H	Ht/Ho	Information from data and plot of Ht/Ho vs time							
0.33	19.70	4.55	1.00	Bore Hole Diameter: 8 in							
0.41	19.68	4.53	1.00	Total Depth of Well: 25 ft							
0.75	19.62	4.47	0.98	Stand Pipe Area: 50.27 in^2							
1.00	19.60	4.45	0.98	0.35 ft^2							
1.50	19.54	4.39	0.96	Coordinates from Graph for Slope Calc:							
2.00	19.50	4.35	0.96	H1/Ho: 0.86							
3.00	19.44	4.29	0.94	t1: 20:00 min							
5.00	19.34	4.19	0.92	H2/Ho: 0.80							
7.00	19.27	4.12	0.91	t2: \$0,00 min							
10.00	19.20	4.05	0.89								
20.00	19.06	3.91	0.86								
30.00	18.95	3.80	0.84	H1: 3.91 H2: 3.64							
40.00	18.85	3.70	0.81	t1: 20.00 t2: 50.00							
50.00	18.77	3.62	0.80	Radius R: 4.00 in							
60.00	18.66	3.51	0.77	Radius R: 0.33 ft							
				Depth D: 9.85 ft							
]							
			a series	D/R: 29.55							

Shape Factor Determination Value: 0.616599 *

*This value is used in conjunction with

Figure 13 of Reference [1] to obtain the shape factor.

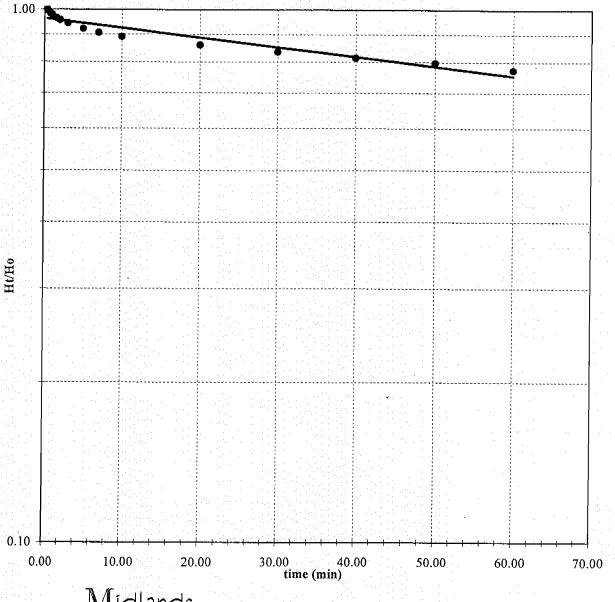
Shape Factor S: 3.9

Coeff. of Permeability (K): 4.94E-06 ft/min 7.11E-03 ft/day

2.51E-06 cm/sec

2.51E-06 cm/sec

Ref [1]: Naval Fac. Engr. Command, Design Manual 7.01, soil Mechanics, Condition A.



Midlands Environmental Consultants, Inc.

1144 Old Two Notch Road Lexington, South Carolina 29013. (803) 808-2043 fax: 808-2048

Inflow for Condition A Well MW-7.xls

Inflow Permeability Calculation

Former SCDOT Columbia Maintenance Facility

Test Performed: Type II (Uncased Well)

MW-7

Static: 15.10 ft *Enter Values in Shaded Areas Only

Time (min)	Depth	delta H	Ht/Ho	Information from data and plot of Ht/Ho vs time					
0.50	19.50	4.40	1.00	Bore Hole Diameter: 8 in					
0.75	18.70	3.60	0.82	Total Depth of Well: 25 ft					
1.00	18.32	3.22	0.73	Stand Pipe Area: 50.27 in^2					
1.50	17.50	2.40	0.55] 0.35 ft^2					
2.00	17.05	1.95	0.44	Coordinates from Graph for Slope Calc:					
2.50	16.36	1.26	0.29	H1/Ho: 0.82					
3.00	15.93	0.83	0.19	t1: 0.75 min					
4.00	15.72	0.62	0.14	H2/Ho: 0.29					
				t2: 2.50 min					
				H1: 3.61 H2: 1.2					
				t1: 0.75 1 $t2:$ 2.5					
				Radius R: 4.00 in					
				Radius R: 0.33 ft					
				Depth D: 9.90 ft					
		per	1	R/D: 0.034					
				D/R: 29.70					
		1, 14,		보면 보다 하는 경기를 하는 것이 없는 것이 없다.					

Shape Factor Determination Value: 0.753333 *

*This value is used in conjunction with

Figure 13 of Reference [1] to obtain the shape factor.

Shape Factor

Coeff. of Permeability (K): 9.35E-04 ft/min

1.35E+00 ft/day

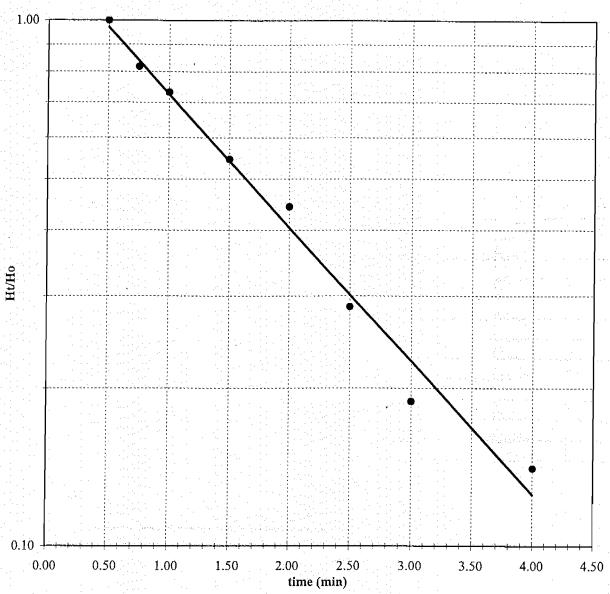
4.75E-04 cm/sec

Ref [1]: Naval Fac. Engr. Command, Design Manual 7.01, soil Mechanics, Condition A.

SCDHEC IFB-32625-12/11/07-EMW Page: 57

3.0

8/20/2002



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1144 Old Two Notch Road Lexington, South Carolina 29013 (803) 808-2043 Fax: 808-2048

> SCDHEC IFB-32625-12/11/07-EMW

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Inflow for Condition A Well MW-8.xls

Inflow Permeability Calculation

Former SCDOT Columbia Maintenance Facility

	XATTI O			en i Ministrae i en el 🏪	Test Per		8/20/02			
Otatia.	MW-8			Type II (Uncased Well)						
Static:		ft		*Enter Values in Shaded Areas Only						
Time (min)	Depth	delta H	Ht/Ho	Information from data and plot of Ht/Ho vs time						
0.50	13.50	8.82	1.00	Bore Hole Diameter: 8 in						
1.00	12.44	7.76	0.88	Total Depth of Well: 20 ft						
1.50	11.72	7.04	0.80	Stand Pipe Area: 50.27 · in^2						
2.00	11.23	6.55	0.74			0.35 ft^				
2.50	10.81	6.13	0.70	Coordinates from Graph for Slope Calc:						
3.00	9.98	5.30	0.60	H1/Ho: 0.74						
4.00	8.96	4.28	0.49	t1:	2.00 mi	n				
5.00	7,86	3.18	0.36	H	0.49					
				t2:		4.00 mi	n			
					· · · · · · · · · · · · · · · · · · ·					
					+ %					
				H1:	6.53	H2:	4.32			
				t1:	2.00	t2:	4.00			
				Radius	R:	4.00 in				
				Radius	R:	0.33 ft				
				Depth	D:	15.32 ft				
					R/D:	0.022				
					D/R:	45.96				

Shape Factor Determination Value: 0.645933 *

*This value is used in conjunction with

Figure 13 of Reference [1] to obtain the shape factor.

Shape Factor

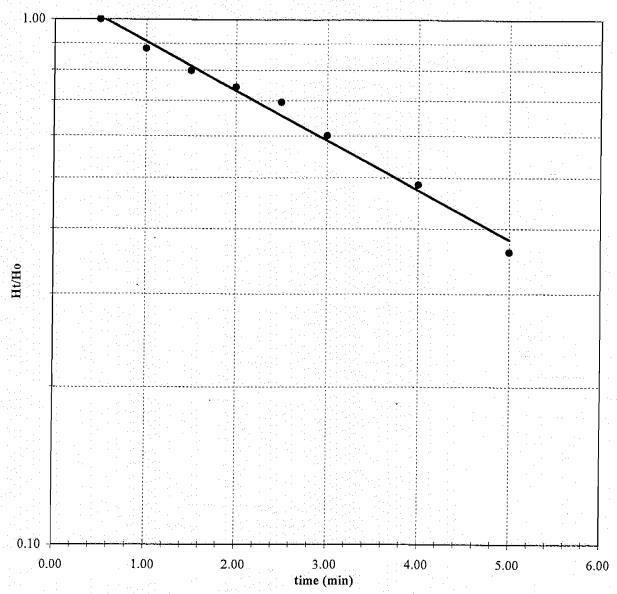
Coeff. of Permeability (K): 3.06E-04 ft/min

4.41E-01 ft/day

1.55E-04 cm/sec

Ref [1]: Naval Fac. Engr. Command, Design Manual 7.01, soil Mechanics, Condition A.

IFB-32625-12/11/07-EMW



Midlands
Environmental
Consultants, Inc.

1144 Old Two Notch Road Lexington, South Carolina 29013 (803) 808-2043 fax: 808-2048

SCDHEC

IFB-32625-12/11/07-EMW

Page: 60

,									Boring/V		B-1	
Project:				Location:					Logged E			
SCDOT - Columbia Maintenano								Norman E. Partin, Jr				
County: Richland				Latitude/Lon	gitude:			g Date:			lled Depth:	
State: South Carolina				NA			8/17	/00	· .		21.0 ft.	
Drille		Lemire			1.25" HSA	6 - 5 - 10 - 10 - 10 - 10 - 10 - 10 - 10						
		SAEDACCO)	Equipment:				Sampling	Method:	Split	Spoon	
	donment:			Ground Eleva	ation:		ater Le	vel/Date:			Hole Diameter:	
N.	A			NA		NA			* . *		Alon co	
Sample	Depth	Penetration Resistance	Sample Rec. (%)	OVA Test Data		1	Litholog	gy / Remari	ks			S Graphic Log
					Grass	4	L					<u>×,∵,</u> <u>∞,∵,</u>
					subrounded	trace clay, I, dry, no o	dor.	orange, coar	rse to tine, i	loose, sub	angular to	(, ; × ,
1				2								×
	5											× · · · · · · · · · · · · · · · · · · ·
				9.5	Sandy Clay subrounded	, tan, oran	ge, brow	n, coarse to	very fine, f	irm, low	plasticity,	
	10											
	15			22	odor.						y fine, moist, no	
	20			120	Clayey Sar odor. Boring Ter			arse to fine,	S	CDHEC	nded, saturated, no	
Notes	: Tank # 1	Basin - 1,00	00 gallo	on waste oil ta	nk							=
								<u> </u>				
Job N	o.: -2633	Grid No.: NA					OORI	E Property	Sciences		Page 1 of	I

Boring/Well No: B-2 Project: Location: Logged By: SCDOT - Columbia Maintenance Facility Columbia Norman E. Partin, Jr County: Richland Latitude/Longitude: **Drilling Date:** Drilled Depth: State: South Carolina 8/17/00 NA 16.0 ft. Driller: Rich Lemire Method: 4.25" HSA Drilling Co.: **SAEDACCO** Sampling Method: Equipment: Mobile B-57 Split Spoon Abandonment: Ground Elevation: Static Water Level/Date: Hole Diameter: NA NA ŇΑ Penetration Resistance Graphic Log Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks Grass Sandy Clay, red-orange, gray, yellow-orange, coarse to very fine, firm, dry, no Sandy Clay, as above. 2 Clay, gray, orange streaks, fine to very fine, very firm, low plasticity, dry, no Clay, as above. 220 Sand, pink, coarse to fine, moist, trace odor. Clay, as above moist. Sand, as above, moist Boring Terminated at 16 feet. 20 25 SCDHEC IFB-32625-12/11/07-EMW Page: 62 Notes: Tank # 6 Basin Job No.: Grid No .: C-2633 NA **QORE Property Sciences** Page 1 of 1

Boring/Well No: B-3 Location: Logged By: Project: SCDOT - Columbia Maintenance Facility Columbia Norman E. Partin, Jr Latitude/Longitude: **Drilling Date:** Drilled Depth: County: Richland 8/17/00 16.0 ft. State: South Carolina NA 4.25" HSA Driller: Rich Lemire Method: Sampling Method: Split Spoon Drilling Co.: **SAEDACCO** Equipment: Mobile B-57 Static Water Level/Date: Hole Diameter: Abandonment: Ground Elevation: NA NA NA Penetration Resistance | Graphic Log Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks Clayey Sand, orange, tan, dark gray, coarse to fine, firm, subangular to angular, 140 dry, petro odor and staining. Clay, gray, red streaks, firm, fine to very fine, trace petro odor. 50 10 800 Clay, as above. Clayey Sand, orange, tan, brown, coarse to fine, loose, subangular to angular, wet, Boring Terminated at 16 feet. 20 SCDHEC IFB-32625-12/11/07-EMW Page: 63 25 Notes: Tank # 6 Basin Job No.: Grid No .: Page 1 of 1 **QORE Property Sciences** C-2633 NA

Boring/Well No: B-4 Project: Location: Logged By: SCDOT - Columbia Maintenance Facility Columbia Norman E. Partin, Jr County: Richland Latitude/Longitude: Drilling Date: Drilled Depth: State: South Carolina NA 8/18/00 16.0 ft. Rich Lemire Driller: Method: 4.25" HSA Drilling Co.: **SAEDACCO** Equipment: Mobile B-57 Sampling Method: Split Spoon Abandonment: Ground Elevation: Static Water Level/Date: Hole Diameter: NA ŃΑ ΝA Penetration Resistance Graphic Log Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks Sandy Clay, mottled, red, yellow, orange, medium to very fine, firm, dry, no odor. Sandy Clay, as above. 100 Clayey Sand, orange, gray, tan, coarse to fine, loose, moist, no odor. Clay, gray, red, and tan streaks, trace medium grain sand, dry, no odor. Clay, as above. >1000 Silty Clayey Sand, tan, orange, medium to fine, loose, angular to subangular, moist, strong petro odor. Boring Terminated at 16 feet. 20 SCDITEC IFB-32625-12/11/07-EMW Page: 64 Notes: Tank # 6 Basin Job No.: Grid No .: C-2633 **QORE Property Sciences** Page 1 of 1 NA

Boring/Well No: B-5 Project: Logged By: Location: SCDOT - Columbia Maintenance Facility Columbia Norman E. Partin, Jr County: Richland Latitude/Longitude: **Drilling Date:** Drilled Depth: 8/18/00 State: South Carolina 10.0 ft. NA Driller: 4.25" HSA Rich Lemire Method: Drilling Co.: SAEDACCO Mobile B-57 Sampling Method: Equipment: Split Spoon Abandonment: Static Water Level/Date: Ground Elevation: Hole Diameter: NA NA. NA Penetration Resistance Graphic Log Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks 580 Clayey Sand, tan, brown, coarse to fine, loose, moist, petro odor and staining. Clayey Sand, as above. >1000 Sandy Clay, mottled, red, orange, tan, fine to very fine, firm, dry, petro odor and > 1000 Sandy Clay, as above. Sandy Clay, as above, rock at 7' and 7.75'. >1000 Rock, quartz. >1000 10 Boring Terminated at 10 feet. 15 20 $25 \cdot$ SCDHEC IFB-32625-12/11/07-EMW Page: 65 Notes: Piping/Dispenser Area Job No.: Grid No.: **QORE Property Sciences** Page 1 of 1 C-2633 NA

Boring/Well No: B-6 Logged By: Project: Location: Columbia Norman E. Partin, Jr SCDOT - Columbia Maintenance Facility Latitude/Longitude: **Drilling Date:** Drilled Depth: County: Richland 16.0 ft. 8/18/00 State: South Carolina NA 4.25" HSA Driller: Rich Lemire Method: Sampling Method: Split Spoon Drilling Co.: **SAEDACCO** Equipment: Mobile B-57 Hole Diameter: Ground Elevation: Static Water Level/Date: Abandonment: NA NA NA Penetration Resistance Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks Clayey Sand, brown, yellow, orange, firm, coarse to fine, angular to subangular, dry, no odor. 0 Clayey Sand, as above, moist. 0 Clay, tan, gray, firm, low plasticity, dry, no odor. Silty Sand, tan, gray, trace orange, clay bands 15.25-15.5, moist, no odor. 15 Boring Terminated at 16 feet. 20 SCDHEC IFB-32625-12/11/07-EMW Page: 66 25 Notes: Tanks 345 Basin Grid No.: Job No.: Page 1 of 1 **QORE Property Sciences** C-2633 NA

Boring/Well No: B-7 Project: Location: Logged By: SCDOT - Columbia Maintenance Facility Columbia Norman E. Partin, Jr **Drilling Date:** Drilled Depth: County: Richland Latitude/Longitude: 8/18/00 16.0 ft. State: South Carolina NA Driller: Rich Lemire Method: 4.25" HSA Drilling Co.: **SAEDACCO** Mobile B-57 Sampling Method: Split Spoon Equipment: Abandonment: Static Water Level/Date: Hole Diameter: Ground Elevation: NA NA NA Penetration Resistance Sample Rec. (%) OVA Test Data Sample Depth Lithology / Remarks Clayey Sand, orange, gray, coarse to fine, firm, dry, no odor. 1.4 Clay, gray with red and orange, firm, dry, no odor. 1.4 10 Silty Sand, tan, gray, trace orange, moist, no odor. 1.2 15. Boring Terminated at 16 feet. 20 25 SCDIJEC IFB-32625-12/11/07-EMW Page: 67 Notes: Job No.: Grid No .: Page 1 of 1 **QORE Property Sciences** C-2633 NA

Boring/Well No: MW-3 Project: Location: Logged By: **SCDOT** Marsteller Street Norman E. Partin Jr. County: Richland Latitude/Longitude: Drilling/Installation Date: Drilled Depth: Well Depth: State: South Carolina 8/17/00 24.0 ft. 24 feet Driller: Rich Lemire 4.25 inch HSA Method: Development Method: Submersible Pump Drilling Co.: SAEDACCO Equipment: Mobile B-57 Sampling Method: Split Spoon TOC Elevation: Ground Elevation: Static Water Level/Date: Reference Point: Ground-Water Elevation: 99.86 18.9 8/21/00 TOC 80.96 Casing Type: Casing Diameter: Depth Interval: Hole Diameter: **PVC** 0-14 feet 2 inches 8 inches Slot Size: Screen Type: Screen Diameter: Depth Interval: **PVC** 2 inches 14-24 feet 0.01 Grout: Portland Cement Seal: Bentonite Gravel Pack: S andInterval: 0-10 feet Interval: 10-12 feet Interval: 12-24 feet Graphic Log Penetration Resistance OVA Well Completion Test Sample Data Lithology / Remarks Depth (ppm) **Asphalt** Clayey Sand, red, coarse to fine, very hard, firm, dry, no odor. Clayey Sand, red, coarse to fine, very hard, firm, dry, no odor. Clayey Sand, gray, orange, tan, coarse to fine, quartz pebbles, loose, >1000 dry, trace odor. 10 Clayey Sand, tan, orange, gray clay lense 14.5-14.75, coarse to fine, >1000 firm, moist, trace petroleum odor. 15 SCDHEC IFB-32625-12/11/07-EMW Page: 68 Clay, gray, tan, firm, fine to very fine, trace (-) sand, moist, trace >1000 petroleum odor. Notes: Job No.: Grid No .: Page 1 of 2 **QORE Property Sciences** C-2633

Boring/Well No: MW-3 Project: Location: Logged By: **SCDOT** Marsteller Street Norman E. Partin Jr. Clayey Sand, tan, orange, coarse to fine, loose, subangular to subrounded, trace petroleum odor, wet. Boring terminated at 24 feet. 25 50 SCDHEC 1FB-32625-12/11/07-EMW Page: 69 Notes: Job No.: Grid No.: **QORE Property Sciences** C-2633 Page 2 of 2

Boring/Well No: MW-4 Project: Location: Logged By: **SCDOT** Marsteller Street Norman E. Partin Jr. County: Richland Latitude/Longitude: Drilling/Installation Date: Drilled Depth: Well Depth: State: South Carolina 8/18/00 24,0 ft. 24 feet Driller: Rich Lemire 4.25 inch HSA Method: Development Method: Submersible Pump Drilling Co.: SAEDACCO Equipment: Mobile B-57 Sampling Method: Split Spoon TOC Elevation: Ground Elevation: Static Water Level/Date: Reference Point: Ground-Water Elevation: 99.21 17.29 8/21/00 TOC 81.92 Casing Type: Casing Diameter: Depth Interval: Hole Diameter: **PVC** 2 inches 0-14 feet 8 inches Screen Type: Slot Size: Screen Diameter: Depth Interval: **PVC** 2 inches 14-24 feet 0.01 Grout: Portland Cement Seal: Bentonite Gravel Pack: Sand Interval: 0-10 feet Interval: 10-12 feet Interval: 12-24 feet Graphic Log OVA Penetration Resistance Well Completion Test Sample Data Depth Lithology / Remarks (ppm) **Asphalt** Clayey Sand, tan, orange, gray, coarse to fine, angular to subangular, dry, no odor. Clayey Sand, tan, orange, gray, coarse to fine, firm, angular, to 1 subangular, dry, no odor. 5 Clay, orange, gray, firm, trace very fine sand, dry, trace odor. 106 10 Clay, as above, more gray. 15 SCDHEC IFB-32625-12/11/07-EMW Page: 70 Clayey Sand, tan, orange, gray, coarse to fine, firm, saturated, no 2 odor. Notes: Job No .: Grid No .: **QORE Property Sciences** Page 1 of 2 C-2633

Boring/Well No: MW-4 Project: Logged By: Location: SCDOT Norman E. Partin Jr. Marsteller Street Boring terminated at 24 feet. 25 30 35 -SCDHEC IFB-32625-12/11/07-EMW Page: 71 50 -Notes: Job No.: Grid No.: **QORE Property Sciences** C-2633 Page 2 of 2

Boring/Well No: MW-5 Project: Location: Logged By: **SCDOT** Marsteller Street Norman E. Partin Jr. County: Richland Latitude/Longitude: Drilling/Installation Date: Drilled Depth: Well Depth; State: South Carolina 8/18/00 24.0 ft. 24 feet Driller: Rich Lemire 4.25 inch HSA Method: Development Method: Submersible Pump Drilling Co.: SAEDACCO Equipment: Mobile B-57 Sampling Method: Split Spoon TOC Elevation: Ground Elevation: Static Water Level/Date: Reference Point: Ground-Water Elevation: 101.7 19.57 8/21/00 TOC 82.13 Casing Type: Casing Diameter: Depth Interval: Hole Diameter: **PVC** 2 inches 0-14 feet 8 inches Screen Type: Screen Diameter: Depth Interval: Slot Size: **PVC** 2 inches 14-24 feet 0.01 Grout: Portland Cement Seal: Bentonite Gravel Pack: #2 Sand Interval: 0-10 feet Interval: 10-12 feet Interval: 12-24 feet Graphic Log OVA Penetration Resistance Well Completion Test Sample Rec. (%) Sample Data Depth (ppm) Lithology / Remarks **Asphalt** Clayey Sand, red, orange, tan, coarse to fine, firm, dry, no odor. Clayey Sand, red, orange, tan, coarse to fine, firm, dry, no odor. 5 Clay, gray, some red, firm, dry, no odor. Clay, as above. 2.75 10 Clay, as above, more tan. 140 15 Silty Clayey Sand, orange, tan, coarse to fine, loose, moist, no odor. SCDHEC IFB-32625-12/11/07-EMW Page: 72 Clay, tan, gray, fine to very fine, firm, saturated. 80 Notes: Job No.: Grid No.: C-2633 **QORE** Property Sciences Page 1 of 2

GEOLOGIST LOG

Boring/Well No: MW-5 Project: Logged By: Location: SCDOT Marsteller Street Norman E. Partin Jr. Boring terminated at 24 feet, 25 -30 35 40 45 SCDHEC IFB-32625-12/11/07-EMW 50 -Page: 73 Notes: Job No.: Grid No.: **QORE Property Sciences** Page 2 of 2 C-2633



Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:	4 OWNER OF WELL: SC DO+ Columbia SC
Richland Co. System Name: S.C. Dat.	Address:
The second secon	Telephone No.:
Latitude: Longitude:	Engineer Gore Property Science Address: 3 Technology Circle
Distance and Direction from Road Intersections:	- Address: 3 Technology Circle Columbia 5.C. 29203
Sae May on Back	Telephone No.: 883-935-1700
Street Address & City of Well Location:	5. WELL DEPTH (completed) Date Started: 🖶 🔊 – / 🕏 – 00
Sketch Map: MW-3	24 ft. Date Completed: 8-18-00
	6. ☐ Mud Rotary ☐ Jetted ☐ St Bored ☐ Dug
	☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other
See MAP ON	7. USE: □ Domestic □ Public Supply-Permit No □ Industry
See MAP ON Back	☐ Irrigation ☐ Air Conditioning ☐ Commercial
Back	□ Test Well □ □ □ □ □ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■
	Diam.: Height: Above/Below
	Type: Mg PVC Galvanized Surface ft.
2. CUTTING SAMPLES: ☐ Yes ☐ No	☐ Steel ☐ Qther Weight lb./ft.
Geophysical Logs: ☐ Yes (please enclose) ☐ No	in. to ft. depth Drive Shoe? ☐ Yes ☐ No ft. depth
*Thickness Depth to	
Formation Description of Bottom of	9. SCREEN PVC Diam: ユ''
Stratum Stratum	Slot/Gauge: 10/0 Length: 10/
4-6 Red Clay	Set Between: / ft. and / ft. NOTE: MULTIPLE SCREENS ft. and ft. USE SECOND SHEET
	Sieve Analysis ☐ Yes (please enclose) ☐ No
9-11 Red Chy	10. STATIC WATER LEVEL
14-16 Red Sitty Sond	ft. below land surface after 24 hours
	11. PUMPING LEVEL Below Land Surface. ft. afterhrs. PumpingG.P.M.
19-21 Red Sifty Sand	Pumping Test: Yes (please enclose) No
	Yield:
	12. WATER QUALITY
	Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
	Please enclose lab results. 13. ARTIFICIAL FILTER (gravel pack)
	installed from 12 ft. to 24 ft.
	Effective size Uniformity Coefficient SANO
	14. WELL GROUTED? Æ Yes □ No
	Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
	Depth: From Q ft. to / O ft. 15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
	Type well disinfected Yes Type:
	upon completion ☐ No Amount:
	16. PUMP: Date installed:Not installed □
	Mfr. Name: Model No.:
	H.PVoltsLength of drop pipeft. Capacitygpm. TYPE: Submersible Jet (shallow) Turbine
	D lot (door) D Basingon SCDHEC
*Indicate Water Bearing Zones	17. WATER WELL CONTRACTOR'S CERTIFIC Page: 74
	The Developer of the Annual Control of the Control
(Use a 2nd sheet if needed)	Registered Business Name: SAEDACCO Date: 8 - 1/2 - 0
3. REMARKS:	Address: 10401 John Price Rd Charlotte NC
	Signed: Cert. No.:



Water Well Record

Bureau of Water 2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:	4 OWNER OF WELL: SC. DOT Columbia, S.C.
County Richland Co System Name: S.C. DOT	Address:
	Telephane Na.:
Latitude: Longitude:	Engineer Gore Property, Science
Distance and Direction from Road Intersections:	Address: 3 Technology Circles Columbia SC, 29203
see map on back	Telephone No.: 803-935-1700
Street Address & City of Well Location:	5. WELL DEPTH (completed) Date Started: 8-7-00
Sketch Map:	34 ft. Date Completed: \$-\\$-00
li tariwa Tababababa ba ili	6. ☐ Mud Rotary ☐ Jetted 🔼 Bored ☐ Dug
	☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other 7. USE:
see map on back	☐ Domestic ☐ Public Supply-Permit No ☐ Industry
	☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ☐ ☐
	8. CASING: X Threaded Welded
[조건 회사회 기업 : 시간 회사 기업 공기 공기 공기 공기 공기 공기 공기 공기 공기 공기 공기 공기 공기	Diam.: Above/Below
2. CUTTING SAMPLES: Yes No	Type: ▼ PVC □ Galvanized Surface ft. □ Steel □ Other Weight lb./ft.
	in to 14 ft. depth Drive Shoe? Yes No
Geophysical Logs:	in, toft. depth
Formation Description of Bottom of	Type: DVC Diam.: 2"
Stratum Stratum	Slot/Gauge: OIO Length: 10 1
4-6 red clay	Set Between: 19 ft. and 29 ft. NOTE: MULTIPLE SCREENS ft. and ft. USE SECOND SHEET
and alone	Sieve Analysis ☐ Yes (please enclose) ☐ No
9-11 red Clay	10. STATIC WATER LEVEL ft. below land surface after 24 hours
14-16 red Silty sand	11. PUMPING LEVEL Below Land Surface.
	ft. afterhrs. PumpingGRM
19-21 red silty sand	Pumping Test: ☐ Yes (please enclose) ☐ No Yield:
	12. WATER QUALITY
	Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
	Please enclose lab results. 13. ARTIFICIAL FILTER (gravel pack)
e fact - kasit li - v l ele	Installed from 12 ft. to 34
	Effective size Uniformity CoefficientSand
	14. WELL GROUTED? 1X Yes □ No □ No □ No □ No □ Other □ Concrete □ Other □ Ot
	Depth: Fromft. toft.
	15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type well disinfected
	upon completion ☐ No Amount:
	Mfr. Name: Model No.:
	H.PVoltsLength of drop pipeft. Capacitygpm
	TYPE: ☐ Submersible ☐ Jet (shallov SCDHEC ☐ Jet (deep) ☐ Reciprocatii IFB-32625-12/11/07-EMW
*Indicate Water Bearing Zones	17. WATER WELL CONTRACTOR'S CERTIFICA Page: 75 my direction and this report is true to the best or my knowledge with the second control of the second cont
(Use a 2nd sheet if needed)	
3. REMARKS:	Registered Business Name: SAEDACCO Date: 8-17-00 Address: 10401 John Price Rd Charlotte, NC
	Signed: Ruly of Samue Cert. No. 1423
	Authorized Representative



Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:	4 OWNER OF WELL: S.C. DOT COLUMBIA S.C.
County Richard Co. System Name: S.C.DOT	Address:
	Telephone No.:
Latitude: Longitude:	Engineer Gore Property & Science
Distance and Direction from Road Intersections:	Address: 3 Technology (1) Cole
	Address: 3 Technology Circle Columbia 3.C. 29203 Telephone No.: 803-935-1700
see map on back	Telephone No.: 803 - 935 - 1700
Street Address & City of Well Location:	5. WELL DEPTH (completed) Date Started: 8-18-00
Sketch Map:	ft. Date Completed: 8-18-∞
	6. ☐ Mud Rotary ☐ Jetted
	☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other 7. USE:
See map on back	□ Domestic □ Public Supply-Permit No. □ □ Industry
Jan Sec Contract Dice C	☐ Irrigation ☐ Air Conditioning ☐ Commercial
	☐ Test Well
	Diam.: Height: Above/Below
2. CUTTING SAMPLES: ☐ Yes ☐ No	Type: X PVC □ Galvanized Surfaceft.
	☐ Steel ☐ Other ☐ Weight ☐ ☐ Ib./ft. ☐ ☐ Ib./ft. ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Geophysical Logs: ☐ Yes (please enclose) ☐ No	in. to ft. depth Drive sliber Tes No
*Thickness Depth to	9. SCREEN
Formation Description of Bottom of Stratum	Type:PUCDiam.:Q '' Slot/Gauge:O1OLength:1O ' Set Between:IUft. andQUft. NOTE: MULTIPLE SCREENS
	Slot/Gauge: 010 Length: 10 / Set Between: 14 ft. and 24 ft. NOTE: MULTIPLE SCREENS
4-6 red chy	ft. andft. USE SECOND SHEET
	Sieve Analysis ☐ Yes (please enclose) ☐ No
9-11 red clay	10. STATIC WATER LEVEL
:14-16 red silty sand	ft. below land surface after 24 hours 11. PUMPING LEVEL Below Land Surface.
31114 841 5	ft. after hrs. Pumping G.P.M.
19-21 red silty sand	Pumping Test: ☐ Yes (please enclose) ☐ No
	Yield:
	12. WATER QUALITY
	Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No Please enclose lab results.
	13 ARTIFICIAL FILTER (gravel pack) XI Ves CINO
	Installed from 12 ft. to 34 ft.
	Effective size # 2 Uniformity Coefficient Sand
	14. WELL GROUTED? ☐ Yes ☐ No
	Neat Cement □ Sand Cement □ Concrete □ Other □ Depth From □ ft to □ 10 ft
	Depth: FromO ft. toft. 15. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ft. direction
	Type well disinfected Yes Type: Type:
	upon completion ☐ No Amount:
	16. PUMP: Date installed: Not installed □
	Mfr. Name: Model No.:
	H.P. Volts Length of drop SCDHEC IFB-32625-12/11/07-EMW TYPE: Submersible Jet (shallow) Page: 76
	TYPE: Submersible Jet (shallow) Page: 76 Reciprocating
*Indicate Water Bearing Zones	17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
	my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)	Registered Business Name: <u>SAEDACCO</u> Date: <u>8-18-00</u>
3. REMARKS:	Address: 10401 John Price Rd Charlotte, No. Signed: Kily Ademie Cert. No. 1423
	Small Ruly Rolling
	Authorized Representative

	OVA	,	Well	Neg 10	- 11			100		בן	Pen lows	P	r F	not:				
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Grass and Topsoil																		
Brown, Fine to Medium Sandy Clayey	14.4	****																
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Brown, Fine to Medium Sandy CLAY	4. P	*****			e ie j													ĺ
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Boring Number: MW=1R
Date Drilled: 8/7/02
Drilled By: American Environmental Drilling, Inc.
Logged But Baileu

Prepared By:

Midlands ★ Environmental Consultants, Inc.

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Date Drilled:	8/7/02
Drilled By: Amer	ican Environmental Drilling, Inc.
Logaed By:	J. Bailey

Prepared By:

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Boring Number: MW=	are,
Date Drilled: 8/1/02	aji.
Drilled By: American Environ	nental nc
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Prepared By:

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Consultants, Inc.

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Boring Number: MW-8
Date Drilled: 8/14/02
Drilled By: American Environmental Drilling, Inc.
Logged By: J. Bailey

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Boring Number:	MW-9
Date Drilled:	8/8/02
Drilled By: Amer	ican Environmental Drilling, Inc.
Logged By:	J. Bailey

Prepared By:

Midlands

★ Environmental
Consultants, Inc.

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Boring Number: MW = 0
Date Drilled: 8/7/02
Drilled By: American Environmental Drilling, Inc.
Logged By: J. Bailey

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Boring Number: $ W = Z $
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Drilled By: American Environmental Drilling, Inc.
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Boring Number:
Date Drilled: 8/14/02
Drilled By: American Environmental Drilling, Inc.
Loaned Buy Baileu

Prepared By:

Midlands ★ Environmental Consultants, Inc.

Penetration Depth (Feet) Well Blows Per Foot Description PPM Diagram 0 5 10 20 80 100 Grass and Topsoil Tan, Fine to Medium Sandy SILT NO BLOWCOUNTS RECORDED 5 -10-White, Fine to Medium Sandy SILT 15-White, Fine to Medium Sandy CLAY 20 Orange, Fine to Medium Sandy Silty CLAY 25 Boring Terminated at 25.0 Feet. Monitoring Well Installed to 25.0 Feet. Groundwater Measured at 7.90 Feet Below Ground Surface on 8/20/02. 30-35-SCDHEC IFB-32625-12/11/07-EMW Page: 86

TEST BORING RECORD
Former SCDOT Columbia
Maintenance Facility
Columbia, South Carolina
SCDHEC Site ID 07359
MECI Project Number 02-416

Boring Number: $MW = 14$
Date Drilled: 8/8/02
Drilled By: American Environmental Drilling, Inc.
Logged By: J. Bailey

Prepared By:

Midlands ★ Environmental Consultants, Inc.

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Boring Number:	MW-15
Date Drilled:	
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Midlands
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Date Drilled: 8/8/02
Drilled By: American Environmental Drilling, Inc.
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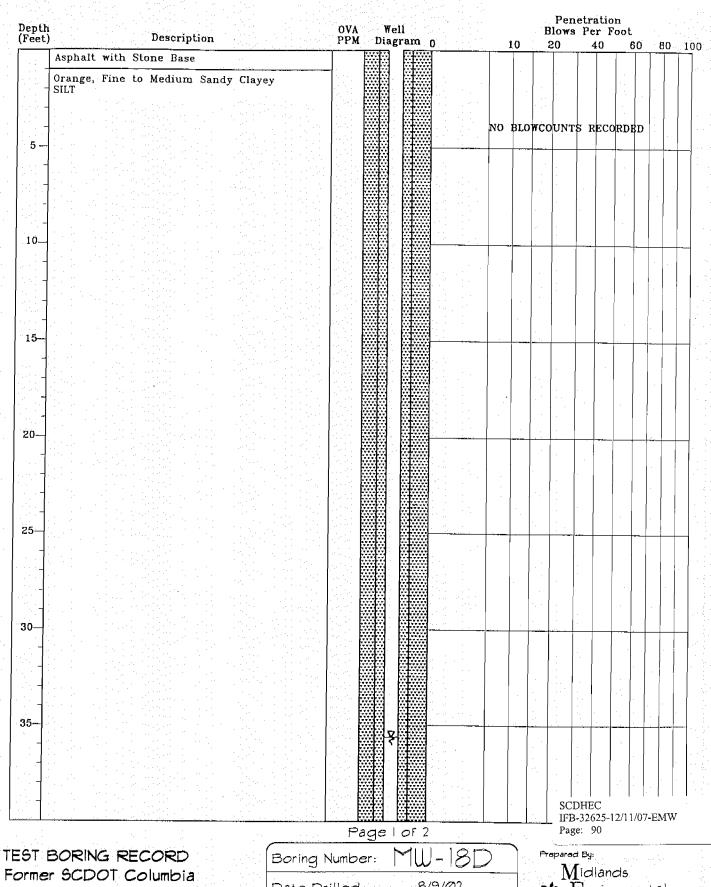
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Boring Number: MW = 17	
Date Drilled: 8/8/02	
Drilled By: American Environmer Drilling, Inc.	ital
Logged By: J. Bailey	

Prepared By:

Midlands ★ Environmental Consultants, Inc.



Boring Number: \\\ \ \ \ \ \ \ \ \ \ \ \ \
Date Drilled: 8/9/02
Drilled By: American Environmenta Drilling Inc.
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Midlands
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Boring Number: MW-18D
Date Drilled: 8/9/02
Drilled By: American Environmenta Drilling Inc.
Logged By: J. Bailey

Prepared By:

Midlands
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Consultants, Inc.